Cutting Through the Fog of Cloud Security: As cloud computing adoption expands, safeguarding data becomes a serious concern. PAGE 26

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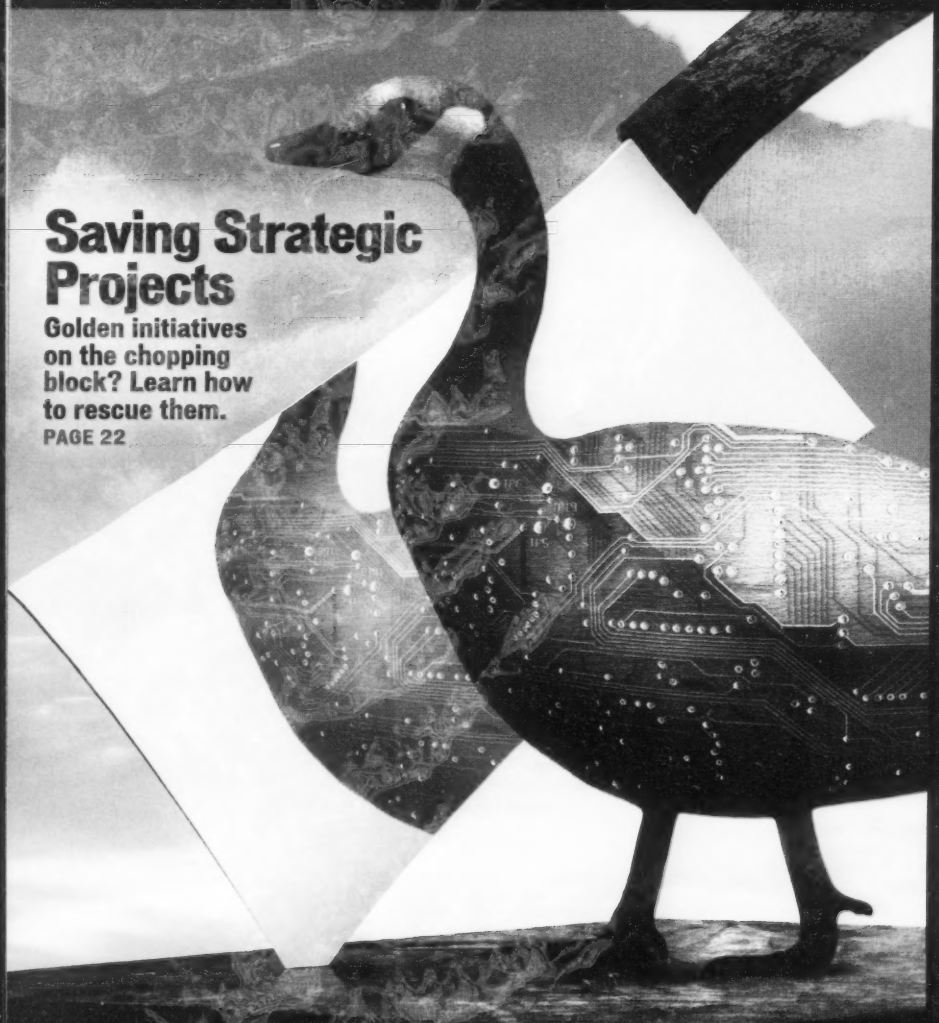

Saving Strategic Projects

Golden initiatives on the chopping block? Learn how to rescue them.
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FEBRUARY 23, 2009
VOL. 43, NO. 8 $5/COPY

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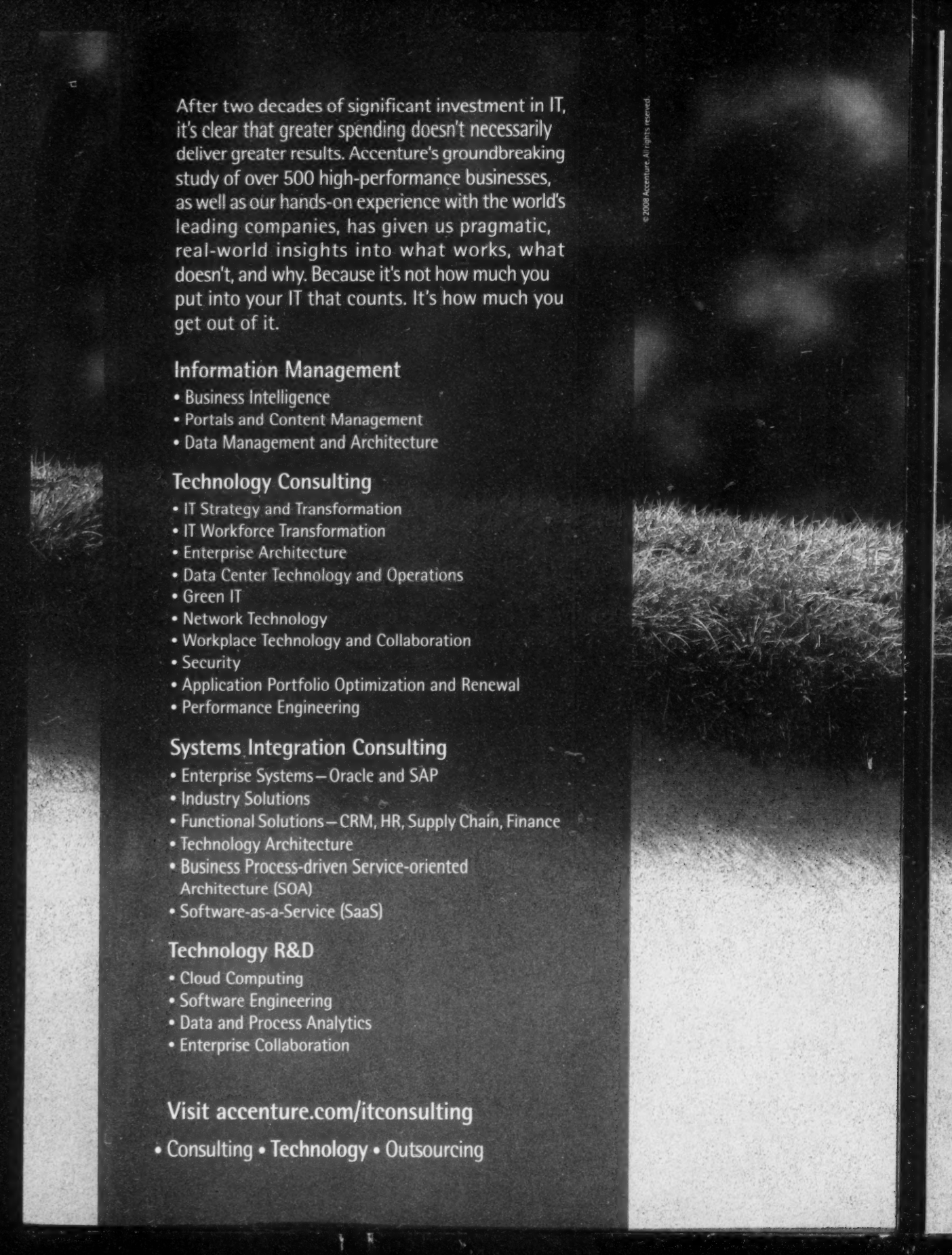

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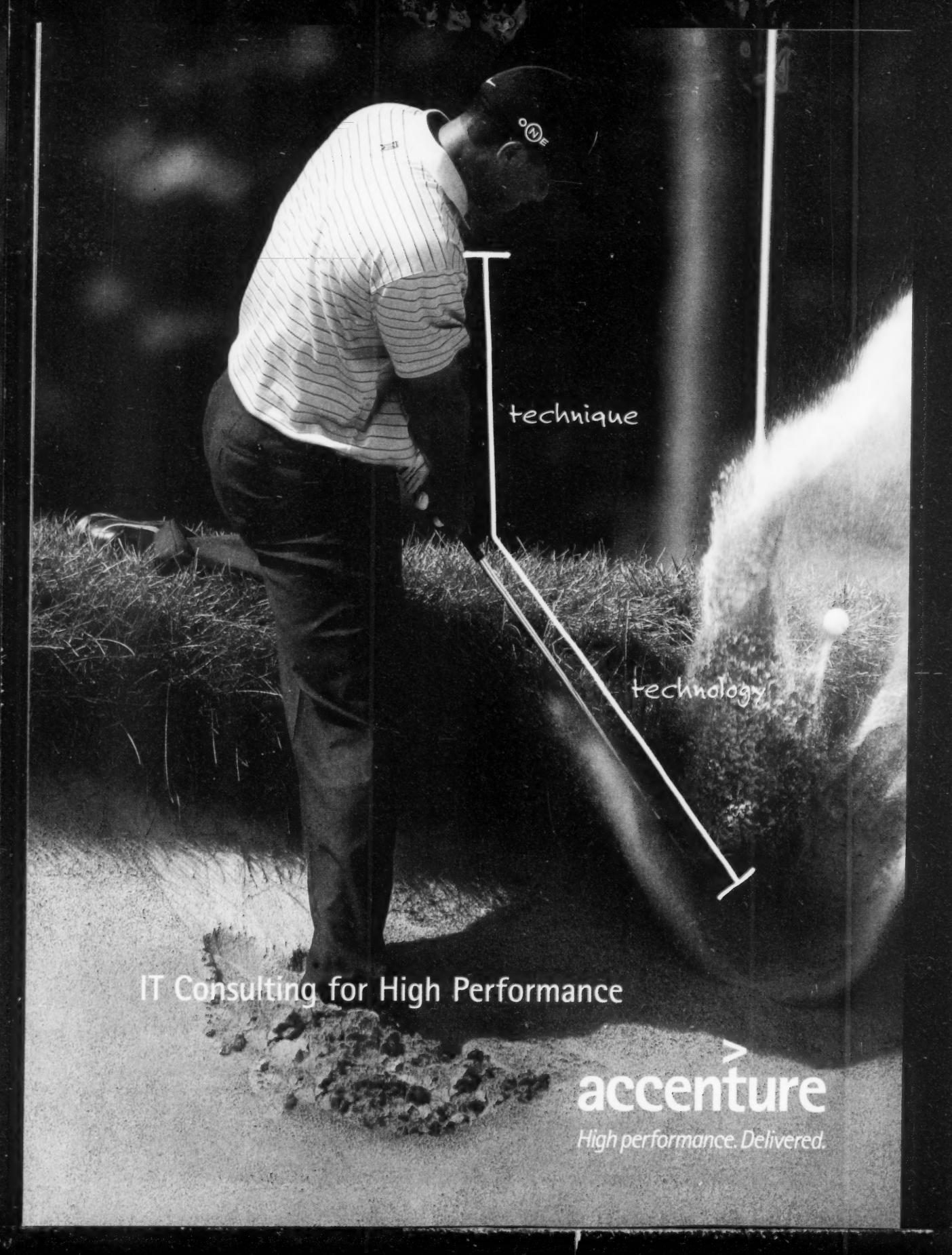
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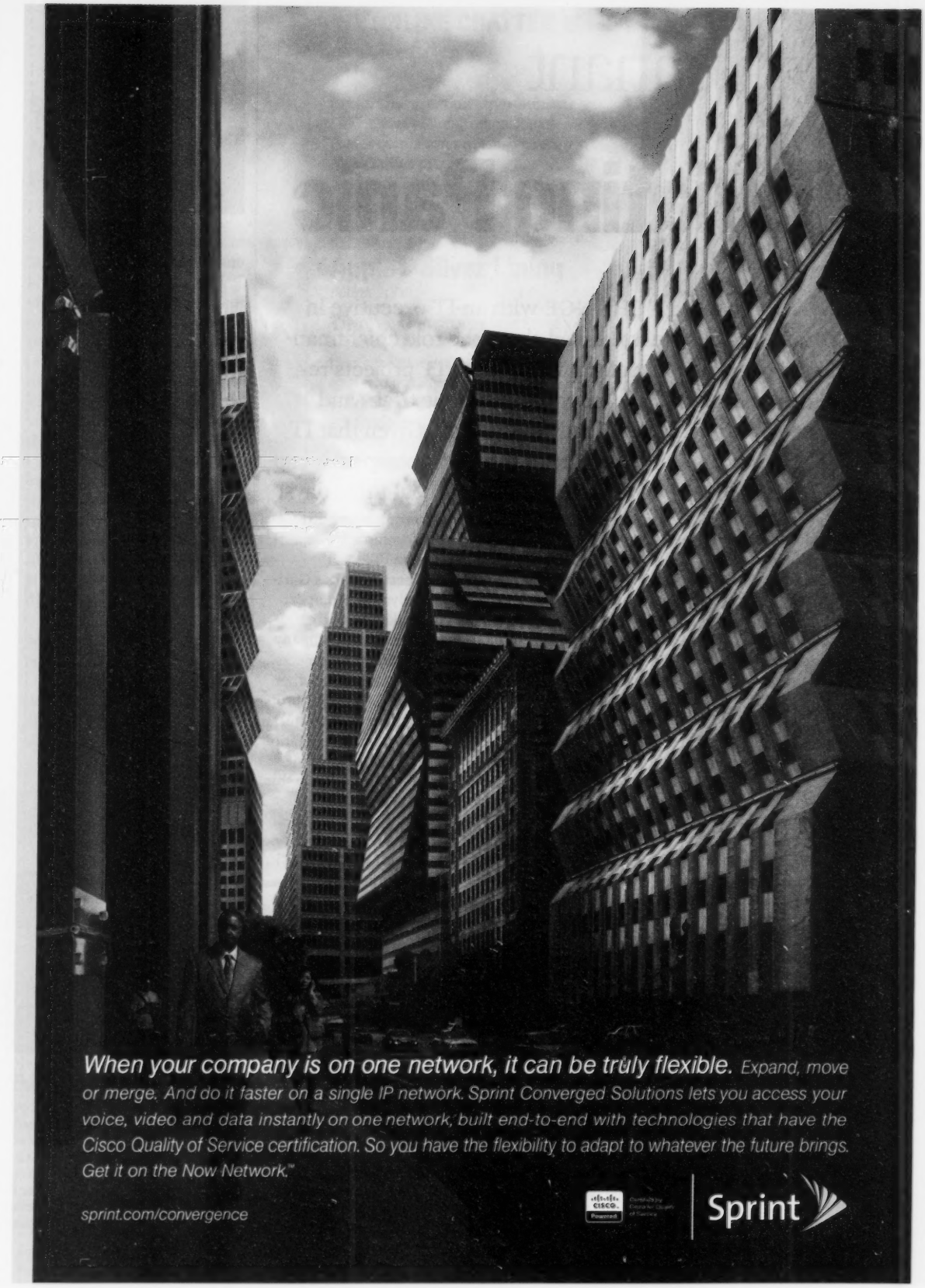
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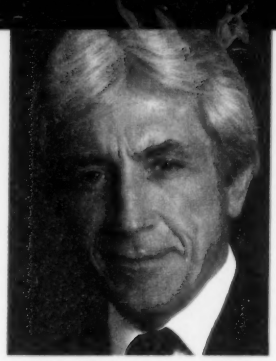
■ EDITOR'S NOTE

Don Tennant

Alleviating Panic



IN AN E-MAIL EXCHANGE with an IT executive in Minnesota last week, I asked about the role chief financial officers play in determining which IT projects receive funding in these troubled economic times and which are kicked unapologetically to the curb. Given that IT outlays often account for a high percentage of a company's capital expenditure, is the CFO's role more prominent these days?

The executive, Thys Coetzee, an IT director in Eden Prairie, responded with the common sense that tends to be typical of people from the Upper Midwest.

"CFOs are supposed to help the execs see what the financial ramifications of any decision are, IT execs included. It is a team effort to take an organization forward after that," Coetzee said. "I backed off on a highly important IT project just the other day because the CFO could show me an extremely sensitive issue looming. Will we pay from a technology standpoint and at some risk to the company? No doubt in my mind. Was the CFO right to want me to hold off? With the data at hand, absolutely. Rocks and hard places are, after all, what IT is about."

Indeed, knowing when to back off is key to any CIO's survival at a time when even demonstrable ROI is no longer sufficient justification for an IT project. But even more critical to survival is knowing which projects to champion in the first place.

That's the conclusion I drew when I read this week's cover story, Tam Harbert's "Saving Strategic Projects" (page 22). The article is meant to offer advice on "how to keep make-or-break IT initiatives off the chopping block in troubled times," but it would be a serious mistake to read it as some sort of battle plan for defending the IT kingdom.

Coetzee's emphasis on the IT executive's role as one that contributes to the decisions made by the executive team is echoed throughout the article. "The CIO is first and foremost a member of the management team," said Sunoco CIO Peter Whatnell. The CIO needs to focus on sustaining the company, not on buttressing the company's dependence on IT.

■ The CIO needs to focus on sustaining the company, not on buttressing the company's dependence on IT.

Harbert also cites Gartner analyst Jorge Lopez, who spoke of an IT executive at an oil company who's evaluating projects based on cash flow rather than ROI. "Whatever project you want to save and are staking your reputation on, it had better be connected to dealing with this [economic] storm," Lopez said. "Because if it's not, not only will the project be gone, but if you fight for it, you'll be gone, too."

Often, then, the biggest contribution IT can make is to initiate projects that will enable expense cuts and ease the company's immediate cash-flow problems. In an e-mail exchange last week, Cora Carmody, senior vice president of IT at Jacobs Engineering, said now is the time to explore new technologies like Google Apps — low- or no-cost technologies that in the past seemed "wacky" to traditional IT shops but now "might actually have the traction for the enterprise."

That point is reinforced in our cover story as well. Vivek Kundra, CTO for the District of Columbia, had a $4 million budget to build an intranet for the district, which has a debilitating $130 million budget deficit. Using cloud computing, Google Apps and wikis, he built it for $475,000. Meanwhile, Sunoco's Whatnell wonders why companies aren't using Skype instead of some obscenely priced videoconferencing system.

The trick, of course, is to cut costs without overreacting in a way that decimates the company's productivity. Coetzee cited an item in last week's Shark Tank about a company that banned mobile employees from accessing the Internet by any means other than dial-up. Clearly, we need to be smarter than that.

"I can bring resources to bear for the line-of-business folks and save them time and money," Coetzee said. "Panic if you must," he advised the LOB'ers. "But not blindly."

Who would have guessed that alleviating panic would have found its way into a CIO's job description? Then again, who better to do it? ■

Don Tennant *is* Computerworld's *senior editor-at-large. You can contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

RESPONSE TO:

Teaching Old Docs New E-health Tricks Proves Difficult

Feb. 9, 2009

The HITECH Act — and $20 billion down payment — is a grand first act toward establishing pervasive electronic health records throughout the U.S. Salting the mine with incentives for Medicare and Medicaid patients surely gets providers using health IT and building an EHR infrastructure (along with streamlining care for seniors and the uninsured).

But will that Medicare/Medicaid dose be enough to change the system for everyone else, most especially those in their teens, 20s and 30s who will benefit most from wellness, preventive care, and complete medical records over their lifetimes?

How will such efforts expand beyond rural areas and selected populations?

Are we ready to start creating portable records for uninsured children, or are we going to let them slip through the cracks in our imperfect information environment?

The goal of comprehensive care first requires comprehensive records.

■ **Submitted by:**
Jeremy Engdahl-Johnson

RESPONSE TO:

Apple's Silver Lining

Feb. 9, 2009

There's one main way that Steve's absence isn't completely bad, and that's the fact that Apple can demonstrate it will survive without him. Maybe next time the stock won't react so violently to Steve news.

As for the five Scot Finnie mentions, they are mainly a wish list for self-important pundits. Netbooks aren't important or profitable at this point. Apple's internal information belongs to the company. And they have become a huge company without kowtowing to the enterprise. As for the AT&T contract, Apple should simply keep its word and finish its commitment.

■ **Submitted by:** *Jim Stead*

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The Storm in The Enterprise

The newest BlackBerry is poised to give other smartphones a run for their money in the enterprise. But there are challenges, users say, and testing is key.

The Doctor Is . . . YOU!

Are the symptom-checkers at health Web sites helpful or harmful? We tested the diagnostic tools at several sites and asked doctors for a second opinion.

Power-Line Devices: Do They Really Work?

Review: Power-line devices, which connect a computer to a router via a home's electrical wiring, can be good alternatives to wireless and wired connections. But how well do they really work? Bill O'Brien tested five; here's what he found.

Online Dating: The Technology Behind the Attraction

Ever wonder what powers sites like eHarmony, Plenty of Fish and PerfectMatch? We peek under the covers at online dating sites.

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News Digest

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THE WEEK AHEAD

MONDAY: A settlement conference is scheduled in San Francisco in Oracle's unfair-competition lawsuit against SAP, filed over downloads from Oracle's tech-support site.

TUESDAY: Microsoft plans to hold a "strategic update meeting" with financial analysts in New York.

WEDNESDAY: Salesforce.com is due to report its fourth-quarter financial results. Dell and Novell both plan to file their latest earnings reports on Thursday.

MOBILE & WIRELESS

Windows Mobile Gets More 'Finger-Friendly'

ACKNOWLEDGING the iPhone's influence on smartphone design, Microsoft Corp. last week unveiled an upgrade of its Windows Mobile operating system that includes improved touch-screen and navigation tools.

Microsoft said at the GSMA Mobile World Congress in Barcelona, Spain, that Windows Mobile 6.5 should begin appearing in phones as early as July. The software vendor also announced plans to create an online application storefront similar to Apple Inc.'s App Store and said that it's updating the mobile version of Internet Explorer.

But it's the new user interface in Windows Mobile 6.5 that has the potential to put phones based on the Microsoft operating system in the same class as devices such as the iPhone, BlackBerry Storm and T-Mobile G1.

"Everything is now finger-friendly," said Scott Rockfeld, Microsoft's group product manager for Windows Mobile. Most of the items on the interface are large enough that users can activate them by touching the screen, instead of having to use a stylus or navigate through menus by pushing buttons, he said.

Windows Mobile 6.5's start-up screen features a honeycomb design for easier use.

The honeycomb-style start-up screen also enables users to launch applications by simply dragging their icons, according to Microsoft officials. In addition, the operating system lets users return missed calls or messages with a single click.

"The cleaned-up interface in 6.5 is the most important thing [Microsoft] could have possibly done," said Philippe Winthrop, an analyst at Strategy Analytics Inc. "Is it slick like an iPhone? No. But it's not meant to be."

Windows Mobile is a practical choice for business users as well as IT departments that want to manage mobile devices in a secure way, Winthrop said. But he called the software's current user interface "kludgy."

Sean Ryan, an analyst at market research firm IDC, also gave Microsoft credit for recognizing the need to improve the user experience in Windows Mobile.

"Microsoft has always done better at understanding the needs of IT, but now it's crossing over to pay attention to the needs of the end user," Ryan said.

That may help IT managers in the end, he added — even if Windows Mobile 6.5 doesn't steal the user buzz away from the iPhone. Ryan said the improved user interface "creates more of a situation where IT can say, 'This is what we support,' and they might not get as much pushback."

— Matt Hamblen, with Nancy Gohring of the IDG News Service

OPERATING SYSTEMS

Microsoft Denies Charging Vista Downgrade Fee

Microsoft Corp. last week rebutted allegations that it charges users to downgrade from the Windows Vista operating system to the older XP software.

Complainant Emma Alvarado of Los Angeles contends that she was unfairly charged a $59.25 fee to downgrade a new Lenovo laptop from Vista to XP.

A clause in the Windows license allows users in certain cases to replace newer versions of Windows with an older edition without having to buy a second license.

"Microsoft does not charge or receive any additional royalty if a customer exercises [downgrade] rights," said a Microsoft spokesman.

The lawsuit charges that Microsoft's policy barring computer makers from offering XP on new PCs after Vista's early-2007 launch violated Washington state consumer-protection laws.

The lawsuit seeks damages and class-action status.

– GREGG KEIZER

> **"Customers have been forced to purchase the most expensive version of [XP] in order to 'downgrade' from . . . Windows Vista.**
>
> FROM A FEDERAL LAWSUIT CHARGING THAT MICROSOFT VIOLATED WASHINGTON STATE LAWS

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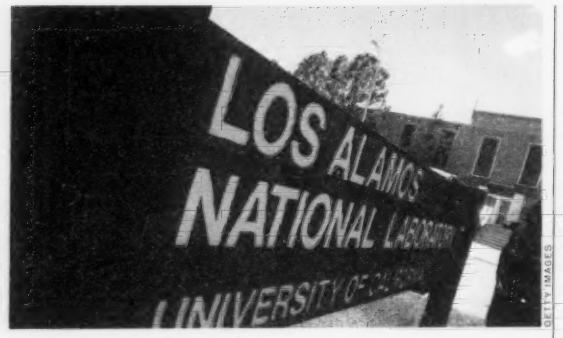

GETTY IMAGES

GOVERNMENT IT

Computer Thefts Prompt Security Check at Nuke Lab

LOS ALAMOS National Laboratory last week launched a month-long effort to ensure that computers taken off-site by employees fully comply with the nuclear research facility's information security policies.

Officials at the U.S. Department of Energy (DOE) facility said they are also conducting a full review of the policies governing the use of lab computers at the homes of employees.

Both initiatives were launched less than two months after the theft of three computers from the Santa Fe home of a lab employee and the subsequent disclosure that several dozen more systems are listed as missing from the U.S. nuclear weapons lab.

Jeffrey Berger, director of communications at the facility in Los Alamos, N.M., said that lab officials are taking the loss of the computers "very seriously."

"It is true that [the lab], like any large organization that uses computers, has had computers go missing or get stolen," he said.

Berger insisted that despite the recent thefts, the lab has "consistently earned some of the highest ratings for property accountability" by the DOE's National Nuclear Security Administration (NNSA).

Berger added that none of the missing systems held classified data.

The loss of the Los Alamos computers was disclosed earlier this month by the Project on Government Oversight, which posted on its Web site a memo from the NNSA to the lab expressing concern over the stolen computers.

The Feb. 3 memo noted that the DOE inquiry into the January theft found that as many as 67 Los Alamos computers were listed as "missing," including 13 that were known to have been lost or stolen. The memo chastised lab officials for what the DOE called significant security weaknesses, as well as configuration management and accountability issues. It also cited uncertainty about the "magnitude of exposure and risk" resulting from the loss of the computers.

Berger contended that the memo and other reports about the thefts posted by the nonprofit watchdog group had "distorted the situation."

— Jaikumar Vijayan

Short Takes

Trend Micro Inc. has spotted the first attack taking advantage of one of two Internet Explorer flaws patched by Microsoft Corp. this month. The flaw enables hackers to install spy software on user systems.

After Hewlett-Packard Co. reported that its first-quarter profits fell 13%, CEO Mark Hurd disclosed plans to cut salaries, reduce employee travel and cut discretionary spending. The company has so far eliminated 9,000 positions as part of a 25,000-worker layoff announced in October.

Sun Microsystems Inc. plans to work with the IEEE and OASIS to further develop and formalize its open-source key management API as a standard for linking encryption devices and management systems.

Timothy Dunaway, 24, of Wichita Falls, Texas, was sentenced last week in federal court to 41 months in prison for selling $1 million worth of counterfeit software on 40 Web sites.

SECURITY

Hackers Shut Down Travel Site for Federal Workers

A TRAVEL RESERVATIONS Web site used by several federal agencies was hit earlier this month by hackers, who shunted unsuspecting users off to a malicious domain. The site, GovTrip.com, remained unavailable late last week.

According to an e-mail sent to federal workers by the General Services Administration, the site was breached before Feb. 11. The agency did not say when the site will be back online.

A GSA spokesman last week said that "the incident was quickly identified." He declined to disclose details, citing an ongoing investigation into the hack.

The GSA e-mail, however, said that the hackers modified GovTrip.com to redirect users to a rogue URL that launched attack code into their systems.

GovTrip
GovTrip.com is currently unavailable.
All travelers who need to make travel reservations should contact their Agency Travel Management Centers. Please contact your Agency travel administrators for additional information if needed.

The GovTrip Web site was shut down in the wake of the breach.

The spokesman did say that no user information is believed to have been compromised. The site is operated by Northrop Grumman Corp.

GovTrip is used by several U.S. government agencies, including the Environmental Protection Agency and the Energy, Interior, Transportation, Treasury, and Health and Human Services departments.

The spokesman said that the affected departments, the GSA and Northrop Grumman are working "to identify short-term and long-term measures to find the source of the incident and to prevent such an incident from recurring."

– GREGG KEIZER

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MOBILE APPLICATIONS

App Vendors Answering Call of the Smartphone

SMARTPHONES ARE increasingly becoming a key development platform for a variety of application vendors. For example, Cisco Systems Inc., MySpace Inc. and Yahoo Inc. all said at the GSMA Mobile World Congress in Barcelona last week that they're expanding their offerings for smartphones.

The rush to develop smartphone applications began with the advent of the iPhone, which now can run thousands of third-party applications. Cisco made its WebEx Meeting Center conferencing software available as a free download for the iPhone early last month.

Last week, Cisco said it will extend WebEx support to several BlackBerry devices and to phones from Nokia and Samsung in April. Users will be able to launch the software from the browsers on their phones and participate fully in webconferences and audio meetings, Cisco said.

MySpace announced that its social networking site will soon be available on the upcoming Palm Pre smartphone and on Nokia's S60 devices. The company — which already supports the iPhone, BlackBerry, Sidekick and Android platforms — said it plans to have its site running on all major smartphones by year's end.

MySpace officials added that they expect half of the social network's users to be accessing the site via mobile devices within a few years.

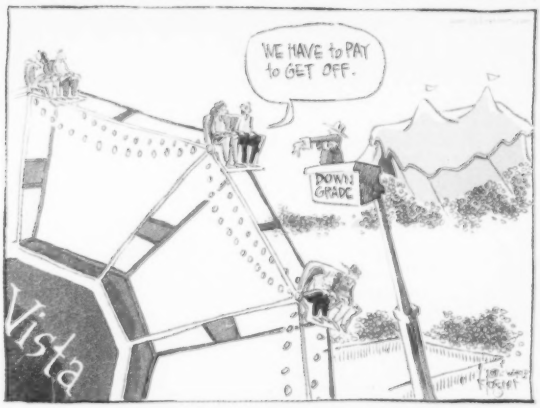
Like MySpace, Yahoo is revamping its Web portal in an effort to better support mobile users. A new Yahoo Mobile service is in beta testing and is due to go live next month, said Marco Boerries, an executive vice president at the company.

Boerries said the icons on the Yahoo Mobile user interface are arranged in a grid for an iPhone-like look.

— Matt Hamblen, with Peter Sayer of the IDG News Service

Cisco's WebEx app running on a BlackBerry.

BETWEEN THE LINES *By John Klossner*



BENCHMARKS LAST WEEK

On its second attempt, Advanced Micro Devices Inc. got enough votes from stockholders to approve the spin-off of its chip manufacturing unit. But just barely: Votes were cast for only 50.26% of AMD's shares.

The Internet Corporation for Assigned Names and Numbers' plan to add numerous generic top-level domains was postponed from September to at least December.

19 YEARS AGO: Adobe Systems Inc. released its Photoshop image-editing software for use on Macintosh systems. A Windows version was added in 1992.

Global Dispatches

Mac Clone Maker Doesn't Fear Apple

WOLFSBURG, Germany – HyperMegaNet UG, a maker of Macintosh computer clones, last week said it is ready to defend the use of Apple Inc.'s Mac OS X in its PearC computer line in court if necessary.

"First, we try to settle with Apple out of court," said a spokesman for HyperMegaNet, which is based here. "But if necessary, we are not afraid of going to court with Apple."

Like computers sold by Doral, Fla.-based Psystar Corp., which has been locked in a legal battle with Apple over its Mac clones since July, the PearCs run Mac OS X 10.5.

The HyperMegaNet spokesman said that Apple has yet to contact the company. Apple did not respond to a request for comment.

Gregg Keizer,
Computerworld

Google May Open Data Center in Finnish Paper Mill

HAMINA, Finland – Google Inc. said it might open a data center here, on the site of a closed paper mill that it has agreed to buy for €40 million ($51 million U.S.).

Stora Enso Oyj, a paper production company in Helsinki, closed the mill last month.

"We are currently considering building a data center at this site," Google said in a statement. First, "there are a number of contingencies to be resolved and plans to be put in place," it added.

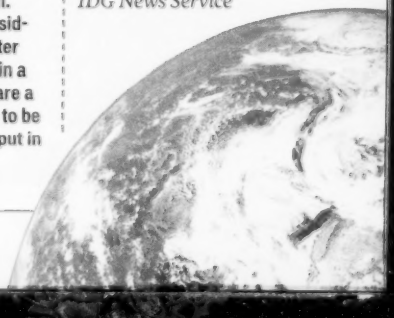
The transaction is slated to close during this year's first quarter.

Jeremy Kirk,
IDG News Service

BRIEFLY NOTED

Fujitsu Ltd. has agreed to sell its struggling hard disk drive business to Toshiba Corp. for an undisclosed sum. The deal is expected to close by midyear. Tokyo-based Toshiba said the acquisition will allow it to enter the high-end drive business, and to expand its line of solid-state disk offerings.

Martyn Williams,
IDG News Service



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STATE OF UNCERTAINTY: Security Rules Slow to Take Hold in Mass.

New regulations on storing personal data have businesses up in arms — and not just in Massachusetts. But the state keeps delaying its compliance deadline. **By Jaikumar Vijayan**

MASSACHUSETTS officials this month gave companies a second reprieve on complying with new regulations aimed at any entity that stores the personal data of state residents. They also softened a particularly contentious provision requiring businesses to ensure that third parties handling such data are in compliance with the rules.

But the state left intact other parts of the regulations that have sparked criticism from the business community both inside and outside of Massachusetts. And even with the extension of the compliance deadline from May 1 to the start of next year, meeting the requirements could be a challenge for some companies.

Massachusetts isn't the only state imposing security regulations on businesses. Last fall, Nevada put into effect a rule requiring personal data to be encrypted if it's transmitted outside of a company's network. And New Jersey is phasing in a set of data security mandates over a two-year period.

But the regulations announced last September by the Massachusetts Office of Consumer Affairs and Business Regulation (OCABR) specify a long list of steps for protecting personal data and require companies to create wide-ranging internal security programs and policies (see "Mandated in Massachusetts," next page).

Also, the OCABR defines personal data more stringently: as an individual's name along with his Social Security or driver's license number, or with a financial account number. In Nevada, bank and credit card numbers must also be accompanied by a PIN or password to meet the state's definition of personal data.

In addition, the OCABR's rules were written to apply to all organizations that handle the data of Massachusetts residents, whether the businesses are based in the state or not. And the regulations are expected to spawn a host of me-too measures in other states.

From an implementation standpoint, the rules set by Massachusetts are "the most stringent data security regulations in the U.S," said the chief privacy officer at a large bank that has numerous branches in the state.

Because of the wide range of mandated actions, finding enough "time and capacity to implement this in a meaningful way" will be a big hurdle, said the CPO, who requested anonymity. "Pushing an unreasonable timeline to businesses will force many to duct-tape together a [security] program that appears to meet the requirements but offers little real protection," he warned.

> **"A vast majority of companies in Massachusetts and around the country know nothing about this regulation.**
> **JON HURST,** PRESIDENT, RETAILERS ASSOCIATION OF MASSACHUSETTS

Last month, a coalition of 70 organizations — including the Retailers Association of Massachusetts, the Massachusetts Bankers Association, the Greater Boston Chamber of Commerce and companies such as Wal-Mart, Target, Microsoft and Google — submitted a petition to the OCABR asking for a "rigorous stakeholder analysis" of the regulations.

The petition questioned the third-party data-handling rules and the need for mandatory encryption, data inventories and limits on the information that companies collect. It also described the May 1 compliance deadline as "overly aggressive" and called for a phased approach like New Jersey's.

"A vast majority of companies in Massachusetts and around the country know nothing about this regulation," said Jon Hurst, president of the Retailers Association of Massachusetts.

Hurst said the Boston-based trade group isn't opposed to the idea of improving data security. But he questioned the wisdom of requiring companies to adopt costly new security measures at a time when many are struggling "just to make payroll" because of the economic recession.

The OCABR didn't respond to requests for comment about the revision of the rules and the extension

Mandated in Massachusetts

The state's security regulations will require companies to:

- **Encrypt personal data that is stored on portable devices or being transmitted on public networks or via wireless connections.**
- **Deploy secure user-authentication and access-control measures, and conduct "reasonable" monitoring of systems in an effort to spot unauthorized activities.**
- **Install firewalls, operating system patches and client-level security tools that are "reasonably up to date" on all systems.**
- **Develop a comprehensive data-security program that sets internal policies and specifies disciplinary measures for employees who violate them.**
- **Inventory all electronic and paper records to identify the ones that contain personal data.**

of the compliance window — the second one granted in the past three months by the agency, which originally wanted companies to comply by the start of this year.

However, in a statement included in the Feb. 12 announcement of the changes, Daniel Crane, the agency's undersecretary, tacitly acknowledged that even the May deadline was too soon for some companies.

"These new safeguards are fundamental standards that will keep information safer and will help businesses reinforce a vital sense of trust with customers," Crane said. But, he added, "it's worth making sure every business in the state has time to make the necessary changes to comply with these regulations." Crane also said that state officials "understand the impact of the current business environment" on companies.

The regulations initially mandated that companies get third-party service providers with access to personal data to certify that they were compliant with the rules. Under the revised version, businesses only have to take "all reasonable steps" to ensure that third parties are applying controls comparable to the ones spelled out by the OCABR.

Deborah Birnbach, an attorney at Boston-based Goodwin Procter LLP, said the third-party provision was a "very impractical and intrusive" mandate that would have required companies to rewrite their contracts with outside providers. That would have been onerous, according to Birnbach — especially for large businesses that deal with many third parties. "Our clients have been somewhat up in arms," she said.

But not everyone has a dire view of the new rules. Chris Cahalin, director of network operations at Papa Gino's Inc., said the Dedham, Mass.-based restaurant chain was on track to meet the requirements before the latest extension of the compliance deadline. (See related story, this page.)

> **"These new safeguards ... will keep information safer and will help businesses reinforce a vital sense of trust with customers.**
>
> DANIEL CRANE, UNDERSECRETARY, MASSACHUSETTS OFFICE OF CONSUMER AFFAIRS AND BUSINESS REGULATION

One of the keys to achieving compliance is to make sure that senior executives are aware of the regulations, Cahalin said. "Once you get management involved at that level, it makes it easier to go along. Then you can go on to educating users" — while also seeking their help in determining where personal data exists in systems, he said.

A large Massachusetts-based retailer was also on track to comply with the new rules by May, according to a network administrator there who asked not to be identified. The admin noted that the retailer already meets many of the encryption requirements as a result of its compliance with the Payment Card Industry Data Security Standard, a set of mandates imposed on merchants by the major credit card companies.

The only new thing the retailer is doing because of the regulations, he added, is installing a file-transfer process management system from Ipswitch Inc. to ensure that data moving across its internal network is fully encrypted. The tool "basically uses encryption as part of the transport mechanism," the network admin said.

But the bank CPO said that in many ways, the Massachusetts rules are more prescriptive than the security and privacy provisions of the federal Gramm-Leach-Bliley Act are. And, he added, it took many years for the bank to become fully compliant with that law after it was approved in 1999. ■

Papa Gino's Cooks Up Stronger Data Controls

EVEN BEFORE Massachusetts announced its new data-security regulations last September, the Papa Gino's restaurant chain had begun moving to bolster the protections on its PCs.

For instance, Papa Gino's last year rolled out new Dell notebooks featuring full-disk encryption tools from Seagate Technology LLC that provide "persistent data protection," said Chris Cahalin, the chain's director of network operations.

All of the data stored on the notebooks is automatically encrypted without end users having to take any action, according to Cahalin. And, he said, centralized administrative and security functions in the Seagate tools reduce the chances of user-induced errors that might expose personal data to cybercriminals.

Papa Gino's has since taken other steps to comply with the pending regulations, such as implementing stronger e-mail security through a service from Symantec Corp.'s MessageLabs unit that encrypts and decrypts the contents of messages based on preset policies.

If an e-mail contains a Social Security number or other sensitive information "and it doesn't occur to a user to encrypt the data," the MessageLabs service will do the encryption on its own, Cahalin said. "We wanted it to be seamless for the end user," he noted.

In addition, Papa Gino's is reviewing its data backup processes to see if it might need to encrypt sensitive information taken from its servers and stored on tapes.

– JAIKUMAR VIJAYAN

« President Barack Obama signed the economic stimulus bill in Denver last Tuesday.

DAVID ZALUBOWSKI/AP IMAGES

Stimulus Package Sets H-1B Limits; E-Verify Usage Mandate Left Out

Of two IT-related amendments to the economic stimulus bill, only one makes the cut. **By Patrick Thibodeau and Jaikumar Vijayan**

A PROVISION requiring banks receiving federal bailout funds to give hiring priority to U.S. workers over foreigners with H-1B visas made it into the final version of the economic stimulus bill that President Barack Obama signed last week.

But House and Senate negotiators dropped a separate proposal that would have forced all employers benefiting from stimulus money to use the government's Web-based E-Verify system to vet the employment status of their workers.

The new H-1B restrictions require financial services firms that get money under the Troubled Assets Relief Program (TARP) to comply with rules set for "H-1B-dependent" companies — those where more than 15% of the workers are on visas.

The rules set a number of requirements for organizations looking to hire H-1B holders, including the need to attest that the employer actively recruited U.S. workers and wouldn't be displacing or replacing U.S. citizens.

Sens. Bernie Sanders (I-Vt.) and Chuck Grassley (R-Iowa) initially proposed an outright ban on H-1B hiring by TARP-recipient banks, but the scope of their amendment to the stimulus bill was later scaled down.

Even so, Charles Kuck, president of the American Immigration Lawyers Association in Washington, said it's unlikely that the affected financial services firms will try to hire H-1B holders for IT jobs and other positions because of the added cost and work now required.

That could leave the firms unable to tap the skills of "qualified foreign talent" to help them during a time of economic crisis, Kuck added. "Maybe we've got all the homegrown talent we need to pull us out of this mess, because now we have to hope we do," he said.

But some H-1B critics contend that the hiring restrictions may do little to stop IT functions from being shifted to foreign workers, since the stimulus bill doesn't place any limits on offshoring.

Ron Hira, an assistant professor of public policy at Rochester Institute of Technology, claimed that many TARP recipients have "huge shadow workforces" at outsourcing vendors. And outsourcing by Wall Street firms has risen since the federal bailout program began last fall, according to Hira.

Restricting H-1B hiring "will rectify some of the indefensible practices of quasi-nationalized banks," Hira said. "But unfortunately, it doesn't close the loopholes where most of the abuse occurs."

The E-Verify provision that was left out of the stimulus bill would have required companies benefiting from the $787 billion package to vet information in job applications by comparing it to data in work-eligibility databases maintained by the U.S. Social Security Administration and the Department of Homeland Security. Also excised from the bill was a proposed extension of the overall E-Verify program beyond March 6, when it is scheduled to expire.

Mark Krikorian, executive director of the Center for Immigration Studies in Washington, criticized the decision to drop the E-Verify usage requirement. The DHS and the SSA "have the hardware and the software capacity to screen all new hires," he said. "It's happening right now."

But Tim Sparapani, senior legislative counsel at the American Civil Liberties Union, said the databases used as part of E-Verify are outdated and contain inaccurate information. "The reason why we don't have mandatory verification [rules]," Sparapani said, "is because the government hasn't done the hard work of going back and scrubbing those databases clean."

Mike Aitken, director of governmental affairs at the Society for Human Resource Management in Alexandria, Va., doesn't want the E-Verify program to disappear. But, he said, the government needs to make the system more reliable. ■

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GARY ANTHES

■ THE GRILL

Jeannette M. Wing

Carnegie Mellon's **'Dragon Lady'** talks about **computational thinking,** tomorrow's **security threats** and hopes for a **focus on science** from the Obama administration.

Dossier

Name: Jeannette M. Wing

Title: Director of computer and information science and engineering, National Science Foundation; professor of computer science, Carnegie Mellon University

Favorite technology: "Wireless broadband at home. It's changed my life!"

Ambition: To learn Chinese

Favorite nonwork pastime: Ballet

Ask her to do anything but . . . "Sing."

Recent good book read: *The Post-American World*, by Fareed Zakaria

Something people don't know about her: "I've wanted to teach ever since I was 4 years old."

Karate rank: Fourth-degree black belt in Tang Soo Do

Jeannette M. Wing is a pioneer in a new discipline called "computational thinking," a term she coined. Computational thinking applies the problem-solving methods of computer science to other disciplines. She's also an authority on "formal methods," mathematically-based techniques for specifying and verifying the correctness of computer hardware and software.

Why do they call you 'Dragon Lady'? That was a moniker I got a long time ago while teaching undergraduates at Carnegie Mellon University. The students dubbed me Dragon Lady because I have high expectations and I can be pretty tough and uncompromising — but in a friendly-fearful way. Eventually, my karate friends picked up on the name.

What research are you personally doing? I'm interested in trustworthy computing, which includes reliability, security, privacy and usability. A student and I are working on a problem in privacy where we'd like to understand what people mean by the "use" and "purpose" of information. Suppose Yahoo

Continued on page 18

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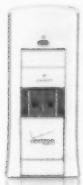

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"President Obama did say the words *science* and *technology* in his inaugural address. I was thrilled. I jumped up and down.

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promises they will not read your e-mail in order to target advertising, but they will read it for spam detection. That seems like a reasonable policy, because you'd like them to filter your e-mail so you don't get spam but not to figure out what ads to serve you. If a company does have such a policy, how can the user ensure it is enforcing it? Is there a formal way to specify those policies? Is there a way to analyze the code to see that it actually satisfies the policy? Using formal methods, how do you analyze the code? We are starting from scratch because we don't even have formal logics for expressing those privacy policies.

Can computational thinking help people who are not computer scientists? One of my visions for the 21st century is that it will be a fundamental skill used by everyone. Scientists and engineers [who are not computer scientists] already know the power of *metal* tools — such as supercomputers and networks — but what I'm arguing is that it's the *mental* tools that can give them more power. It can truly transform the way they think, even prompting them to ask questions they wouldn't have thought to ask before.

[Take] for instance, the fact that we have many techniques for dealing with large data sets — machine learning, data mining, data federation and so on. So for us, large data sets offer a different way to solve problems. But scientists and engineers might not even know that they could look for particular patterns or clusters in a data set. It would be unfathomable that they could answer a question [using such techniques].

We are even seeing applications of computational thinking in music, linguistics, economics, medicine and law. My dream is that a course in principles of computing or foundations of computer science would be on a list of courses for a general education. It would go way beyond programming in Java and would be for everyone.

Is there any hope we will see substantial improvements in software quality? There are no silver bullets. However, we have seen progress. In the past five to eight years, we've seen much more use of automated tools in the software development process. Tools do more and more semantic analysis [of code]. That requires annotating the software so the tools have a better understanding of what the code represents. Eventually, we may be able to more automatically generate the annotations. The tools will become smarter, but the research challenges are still there.

What worries you most in computer security? I've been advocating to the research community to think about the threats of the future. The threats of today come from things like coding vulnerabilities — buffer overruns and so on. We have been pretty fixated on code-level vulnerabilities, but we should be thinking about vulnerabilities at a higher level, at the component level. So you might use one component, like your browser, to interact with another component, like the DNS server, and all of a sudden there is a gap that can be exploited in an attack. We may in the future see more and more of these composition flaws, where even though components may be individually deemed secure, the ensemble may not be.

What kinds of projects do you fund with your $535 million National Science Foundation budget? The NSF funds some very fundamental research driven by deep scientific questions — for example, "What is computable?" — whose impact may be far in the future but which could be truly revolutionary. We also fund fundamental research driven by societal grand challenges, such as climate change, energy, environment and health care.

There are projects in bio-inspired computing, where individual molecules are considered a machine. People have built molecular machines, and the research challenge now is to get them to communicate chemically.

Another hot trend in computer science is in economics. For example, ad placement on Yahoo. And Google is all about auctioning keywords. There's a whole new field called computational macroeconomics. And there is algorithmic game theory. My mantra in computational thinking is that it will really influence the way people think, whether they are scientists, engineers, economists or musicians.

What's the attraction of ballet and karate? I do them for stress relief, and of course to keep physically fit. Having been in ballet performances and karate tournaments helped me in the classroom as a teacher, because as a teacher, one is really performing. As a teacher standing in front of the classroom, one has to be "on," and through ballet performances and karate tournaments, I gained that stage experience. There is a very similar "buzz" one gets in all those kinds of performances — teaching, ballet and karate.

What do you expect from the Obama administration in science? I have great hope. I'm known to be a very optimistic person. President Obama did say the words *science* and *technology* in his inaugural address. I was thrilled. I jumped up and down. He certainly has chosen a dynamite slate of top scientists to advise him. How does that translate into federal funding for research? I'm keeping my fingers crossed.

— *Interview by* **Gary Anthes**

Thornton A. May

IT's Identity Crisis: We're the Elevator

A CELEBRITY CAUGHT breaking traffic or substance-abuse laws is apt to haughtily ask the arresting officer, "Do you have any idea who I am?" It's hard to imagine any IT professional doing the same. (A very good thing, too, since I doubt that query has ever done an offender an ounce of good.)

But it's not just IT workers' lack of celebrity that keeps them from playing the "Do you know who I am?" card. Sadly, the vast majority of IT professionals can't answer the question themselves. We've lost our occupational identity, and we need to get it back.

Occupational identity used to be a no-brainer. Everyone knew who the king was. In England and other countries, medieval tradesmen took as their surnames the labor they did, a practice that accounts for all the Smiths, Coopers, Cooks, Bakers, Brewers and Wrights in this country.

Today, with surnames long established, there is no need to revive the practice, but that means there are no Gretchen Project-Managers or Adam Sysadmins in the phone book.

Some professions equip their practitioners with uniforms and props that serve as identifiers: Lobbyists in Washington have their footwear of English leather and suits of Italian cloth, and gas pump jockeys can be identified by the shirts they wear with their own first name and the name of an oil company embroidered on the pocket.

And here is a story of fluid, mutual recognition: A sociologist working in Mexico pulled out a pad and pen, telling his interview subject, "I'm a writer." Before he could proceed, the interviewee cheerfully responded, "I'm a mechanic," and held out his hands, the tools of his trade, to display the oil underneath his fingernails.

But IT doesn't have occupational props anymore.

■ There are no Gretchen Project-Managers or Adam Sysadmins in the phone book.

We don't wear lab coats, it was always silly to identify us with pocket protectors, and everybody has a computer. Who are we?

Nor do most of us patrol a delimited territory in the enterprise. Most IT professionals no longer work in raised-floor, climate-controlled data centers. We've been distributed to the business units and most often work in anonymous cubicles, most of the tools of our trade residing unobtrusively within our hard drives. Where we work physically doesn't give much of a clue as to who we really are.

An anthropologist coming across IT might classify our tribe as what the celebrated international studies scholar Benedict Anderson called an "imagined community" — it exists in the individual and collective minds of its members but is otherwise nebulous. And yet, ask yourself honestly if there is a consensus even within our own community regarding who we are or what we do.

Collectively, then, we need to take a page from the manual of the modern politician, who has learned that electoral success hinges on being able to define yourself before your opponent does it for you. To not do so leaves our identity in the hands of others. We may not like the identity that accrues around us without our input.

The comic Demetri Martin may be on to something of relevance to IT. Having been told by a store clerk, "If you need anything, I'm Jill," Martin wonders, "If I don't need anything, is she Alice?"

Watching Martin's routine, I recognized that IT's identity has become conditional: If something breaks, we're IT. If a process needs changing, we're IT. If information needs to be accessed, we're IT.

Who are we when nothing breaks, when nothing needs changing, when no information needs to be accessed?

That's a question that needs our attention, lest we become the corporate equivalent of the underloved elevator: always there, always running and never noticed. ■

Thornton A. May *is a longtime industry observer, management consultant and commentator. You can contact him at thorntonamay@aol.com.*

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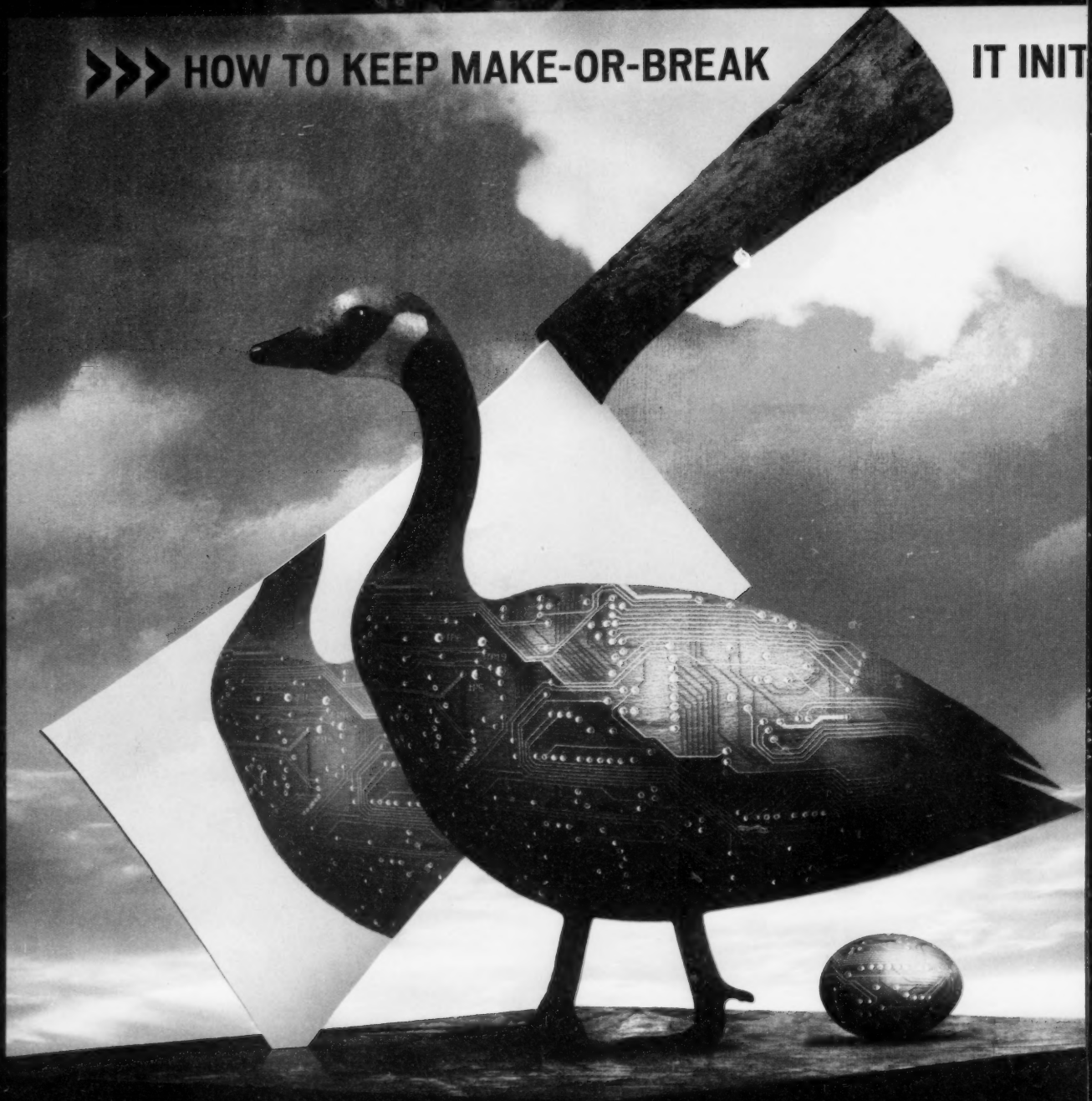

IATIVES OFF THE CHOPPING BLOCK IN TROUBLED TIMES.

SAVING STRATEGIC PROJECTS

BY TAM HARBERT

THERE WAS A JOKE at the height of the Cold War: What should you do in the event of nuclear missile attack? Take shelter, duck and cover, then kiss your butt goodbye. CIOs looking to save projects — even the most strategic ones — might feel the same way as they struggle through today's historic financial meltdown.

"I've never known so many people all predicting doom and gloom at the same time across every front," says Peter Whatnell, CIO at Sunoco Inc. and the new president of the Society for Information Management. "I'm being overly dramatic, but there doesn't appear to be a ray of hope anywhere."

As 2008 drew to a close, market research companies continued to slash their financial forecasts. In October, Gartner Inc. lowered its estimate for 2009 U.S. IT spending growth to 2.3%, down from an earlier prediction of 5.8%. And last month, Forrester Research Inc. predicted a 3% decline in spending on IT goods and services this year compared with 2008. Companies aren't just talking about reducing IT spending; they're talking about reducing it drastically. "I'm hearing folks talk about significant double-digit reductions, and quickly," says Whatnell.

Like emergency room doctors treating a gunshot victim, many executives feel that the priority is simply to stop the bleeding, says Gartner analyst Jorge Lopez. That mentality makes even strategic enterprisewide projects vulnerable. "[The victim's] relatives may be saying, 'Oh my God, he's getting married in three months,' but you can't even listen to that, right? If you don't stop the bleeding, there is no wedding."

Some companies have even shortened their planning time frame from 12 or six months to just three because of economic uncertainty, says Forrester analyst Alex Cullen. Each quarter, they >>>

MICHAEL GIBBS

reassess their situation and decide whether to maintain the same level of spending. "That can force a lot of uncomfortable trade-offs," Cullen says. "But it is a good way of avoiding panic. It does keep options open, and at this time, the biggest thing is uncertainty. Nobody knows how bad it might get."

Must IT executives resign themselves to kissing strategic projects goodbye? No. There are things you can do to keep critical initiatives on track.

STRATEGIC TO WHOM?

Like an emergency room doctor, you may have to perform triage. First, step back and take a hard look at the project. Sometimes CIOs consider a project strategic, only to find out later that they were the only ones who did. IT people tend to justify projects in technical terms, rather than using financial metrics, says Michael Krigsman, CEO of IT consultancy Asuret Inc. In today's economy, the only projects to survive will be those rooted in concrete business value and proven by specific financial metrics, he says.

But even those yardsticks may be evolving. Is the original business case still a priority? A project that was once justified by a four-year return on investment might fade into the background if the business is struggling with cash flow. The company's agenda may be quite different today than it was just six months ago, says John Ciacchella, a principal at Deloitte Consulting LLP.

Ironically, if the project really is strategic — if it involves the executive team and will enable transformation across the business — then it is by definition more than an IT project, which means the CIO's discretion is limited, Cullen says. In a crisis, the executive team "has to figure out where to cut and where to continue to fund, and that's not a CIO decision," he explains.

IT executives should reiterate the benefits of the project and clearly outline the consequences of killing it. But if the other executives aren't persuaded, step back and shut up. "The CIO is first and foremost a member of the management team," says Whatnell. The focus should be on doing whatever is necessary to sustain the company. Cutting the project "may be absolutely the right thing to do for the company," says Whatnell. "If [the other executives] are worried about making payroll in March, they may not be too worried strategically about what CRM is going to do for them in 2010."

In fact, the mantra of "business value" is so last year. Cash flow is "the emerging mantra for 2009," says Lopez. He says that an oil company IT executive recently told him that he was being asked to evaluate projects based on cash flow instead of ROI. "Whatever project you want to save and are staking your reputation on, it had better be connected to dealing with this [economic] storm," says Lopez. "Because if it's not, not only will the project be gone, but if you fight for it, you'll be gone, too."

MAKE IT RELEVANT, RIGHT NOW

Smart CIOs will assess the new lay of the land and be able to explain how and why the project is still relevant or, better yet, even more relevant. Explain the value of the project in the context of current needs, says Teri Takai, CIO for the California state government, which is in the midst of a budget crisis. While the state's IT budget has suffered cuts along with every other department's, she has been able to maintain long-term projects such as the replacement of the state's 30-year-old payroll system by persistently stressing the benefits of the new system. "The message has to be crafted in a way that provides immediate justification," Takai says.

If the company needs cash, explain how the project contributes to cash flow. Perhaps the executive team wants to take advantage of the situation to acquire weak competitors. Emphasize how the project strengthens the company's ability to acquire and digest companies.

You may have to reorganize the project in order to make it relevant to immediate needs. Can you adjust the timing or the scope? Can you push ahead on things that produce immediate revenue? Can you defer certain costs?

> **"The message has to be crafted in a way that provides immediate justification.**
>
> TERI TAKAI, CIO, STATE OF CALIFORNIA

At Harrah's Entertainment Inc., projects have always been evaluated based on their contribution to top-line sales or bottom-line profit, plus some less explicit, hard-to-measure factors, says Heath Daughtry, the company's vice president of enterprise IT. But today, projects need to demonstrate benefits in several major areas, including boosting efficiency and enhancing the customer experience, he says.

"It's no longer a one-dimensional ROI evaluation," says Daughtry. "It has to hit on all the business strategies — on revenue, margin, EBITDA [earnings before interest, tax, depreciation and amortization], customer experience."

That meant making some changes in one of Harrah's major initiatives so it would bring in more earnings sooner.

Do You Have What It Takes?

As a principal at Deloitte Consulting, John Ciacchella advises companies trying to manage through this economic crisis. He has observed the following qualities in CIOs who have successfully saved strategic projects:

1. They are realistic about what is strategic and what is not.

2. They have credibility with their organizations. These CIOs are good stewards of their resources, work well with other executives and demonstrate a willingness to make sacrifices for the common good.

3. They are smart about the design and structure of the project. And they're willing to adjust timing, scope or costs to fit the economic environment.

4. They are assertive. They can make a case to convince others of the merits of keeping a project. "Even after doing the first three things, you've still got to fight," says Ciacchella. "But now you've built a very strong base to support yourself."

– TAM HARBERT

The initiative, called Personalized Real-time Interactive Slot Marketing (PRISM), is designed to provide information and digital entertainment directly to customers through Harrah's 65,000 slot machines. Harrah's is aggressively rolling out the project this year in its most profitable markets, where it is most likely to see the highest return on its investment, says Daughtry. In less profitable markets, it will wait till 2010.

Harrah's is also asking business partners to share in the risk as well as the rewards of some other long-term projects, says Daughtry. For example, a technology partner might help fund a corporate pilot project, which benefits the corporate partner and could also generate good press for the vendor.

Ciacchella cites two examples of Deloitte clients that have reorganized projects in order to accelerate business benefits. Both are large companies that are deploying ERP systems. At one company, the initial plan had been to roll out the entire ERP system first, then renegotiate contracts with suppliers. Instead, the company decided to renegotiate contracts now, even though the ERP system isn't complete.

"They won't be able to manage and monitor those contracts 100%, but at least they will get some portion of that benefit now," Ciacchella says. "And they'll probably get better deals on those contracts by negotiating them now, in a down market, versus later, when the market starts to turn around."

Another client decided that its priorities were customer retention and maintaining the revenue from those customers. So it is emphasizing the customer-facing aspects of its ERP project, such as adding capabilities to its Web portals, while deferring fancy back-office functionality such as business intelligence and financial reporting. Instead, the company set up manual, offshore systems to run the back office for a year, Ciacchella says.

EXPLORE NEW METHODS

Sometimes the best way to save a strategic initiative is to rethink how to accomplish the project's goal. Go back to the drawing board and look at other ways to approach the problem. Technology advances so quickly that a project planned 18 months ago might now be completed more cheaply and efficiently using different means, says Vivek Kundra, chief technology officer for the District of Columbia, which as of December had a $130 million budget deficit.

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>
> **HEATH DAUGHTRY,** VICE PRESIDENT OF ENTERPRISE IT, HARRAH'S ENTERTAINMENT INC.

Kundra, who has won several awards for his innovative use of IT, is no fan of expensive hardware and huge infrastructure investments. Instead, he favors cloud computing, consumer technologies and the collective ideas of the citizenry. Rather than spending $4 million that the district had budgeted to develop an intranet, for instance, Kundra used cloud computing, Google Apps and wikis to create a portal for only $475,000, he says.

Last fall, he launched Apps for Democracy, a 30-day public contest that invited citizens, software developers and the private sector in general to create mashup applications for the district's data using technologies like the iPhone, Facebook and Google Maps. For $50,000, D.C. got 47 applications that Kundra claims would have cost $2.6 million to develop in-house.

Whatnell says that the economic crisis will force more companies to consider nontraditional ways of delivering IT, such as using Web-based applications rather than installing software on every PC. IT departments sometimes overengineer a system rather than using a less-expensive technology that could do the job, according to Whatnell. For example, he says, why not use Skype Internet communications software instead of a multimillion-dollar videoconferencing system?

Another way to cut costs is to re-examine how a project is structured, says Kundra. In the District of Columbia's deployment of an ERP system, he limited the use of expensive consultants and replaced the traditional five-day workweek with round-the-clock shifts to increase productivity. The team completed the project five months ahead of schedule and under budget, he says.

The financial crisis is "a great opportunity to do more with less," says Kundra. "Technology should be the leader in finding the innovative path."

In fact, it can also be an opportunity for CIOs to show how the creative application of technology can further cut costs, increase productivity and even create new sources of revenue. At Harrah's, IT executives have suggested that the company could sell consulting services in two technology areas in which it excels — data mining and business intelligence, says Daughtry. Monetizing a company's core expertise, even things that were previously guarded as corporate "secret sauce," has become a hot topic in boardrooms, he says.

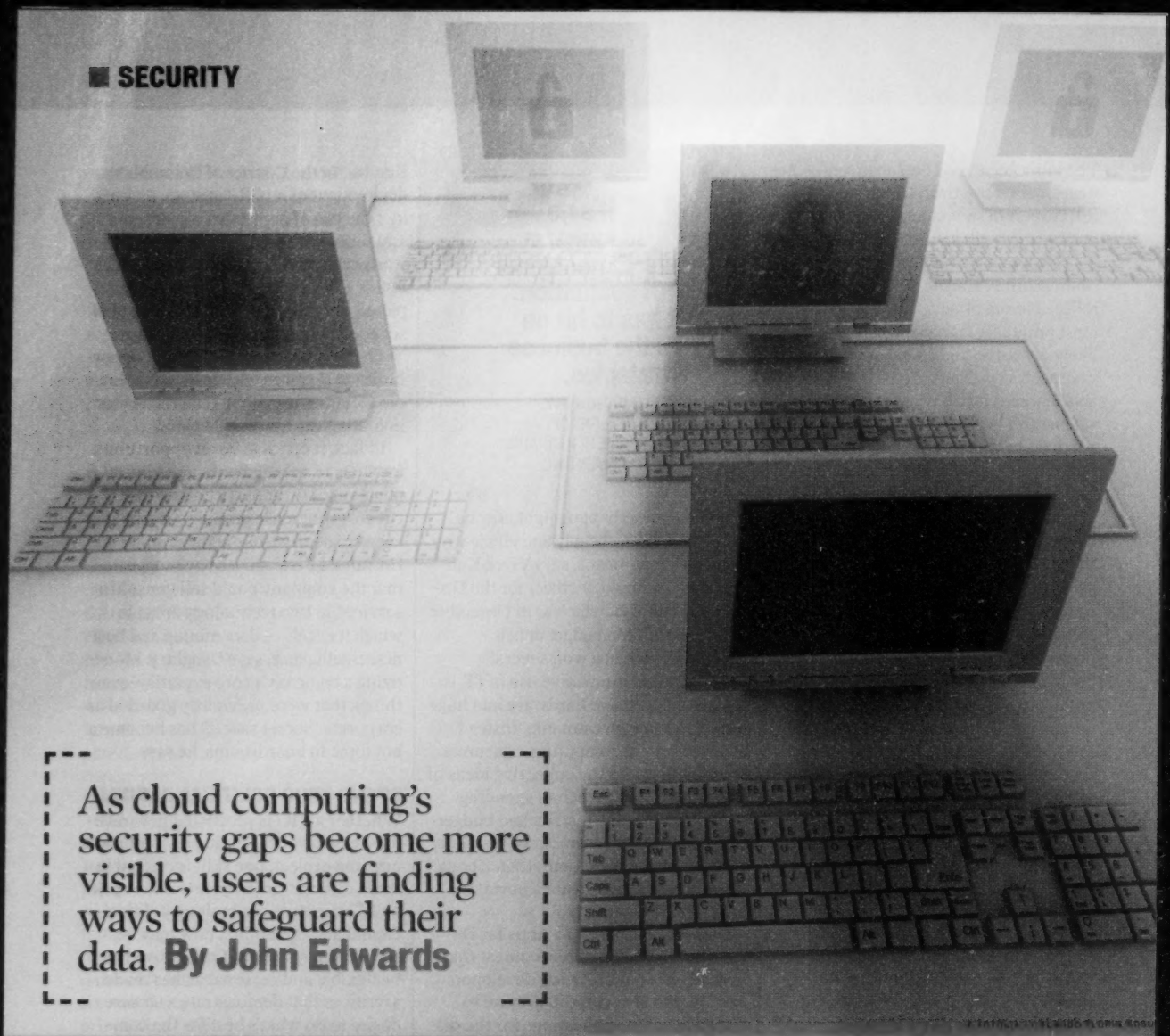
SPEND YOUR POLITICAL CAPITAL

Whether a CIO is proposing new revenue streams or defending an important ongoing project, one skill is critical in these difficult times: political savvy. If an IT executive has built up political capital and credibility, now may be the time to spend it. If he's proved to be flexible and reasonable, has made sacrifices that demonstrate a sincere desire to do what's best for the company, and has the ear of the CEO or CFO, he may be able to use his political leverage.

But beware: Strategic, enterprise-wide projects are usually highly visible and carry the potential for a big impact on the business. Therefore, they can be highly risky for the CIO who fights for them, notes Krigsman. By playing the political card, a CIO "is putting his own credibility — and, by extension, his own career — on the line," he says.

On the other hand, in today's environment, a CIO who saves a deserving project — a project that proves to be vital to the company's survival or success — will cement his reputation. ■

Harbert *is a Washington-based freelance journalist specializing in technology, business and public policy.*



As cloud computing's security gaps become more visible, users are finding ways to safeguard their data. **By John Edwards**

Cutting Through the Fog Of Cloud Security

DANIEL FLAX, CIO at New York-based investment banking and financial services firm Cowen and Co., relies on cloud computing to automate his company's sales activities. While he's satisfied with cloud technology's potential to lower upfront costs, decrease downtime and support additional services, he admits that he has had to work hard to get a handle on the emerging technology's security weaknesses. "Security is one of the things we've had to come to grips with," he says.

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DANIEL FLAX, CIO, COWEN AND CO.

Evan Jones, owner and IT chief of interactive production company Stitch Media, located in Toronto and Halifax, Nova Scotia, is also concerned about cloud security. "It's a scary concept when you just hand all of your important company data over

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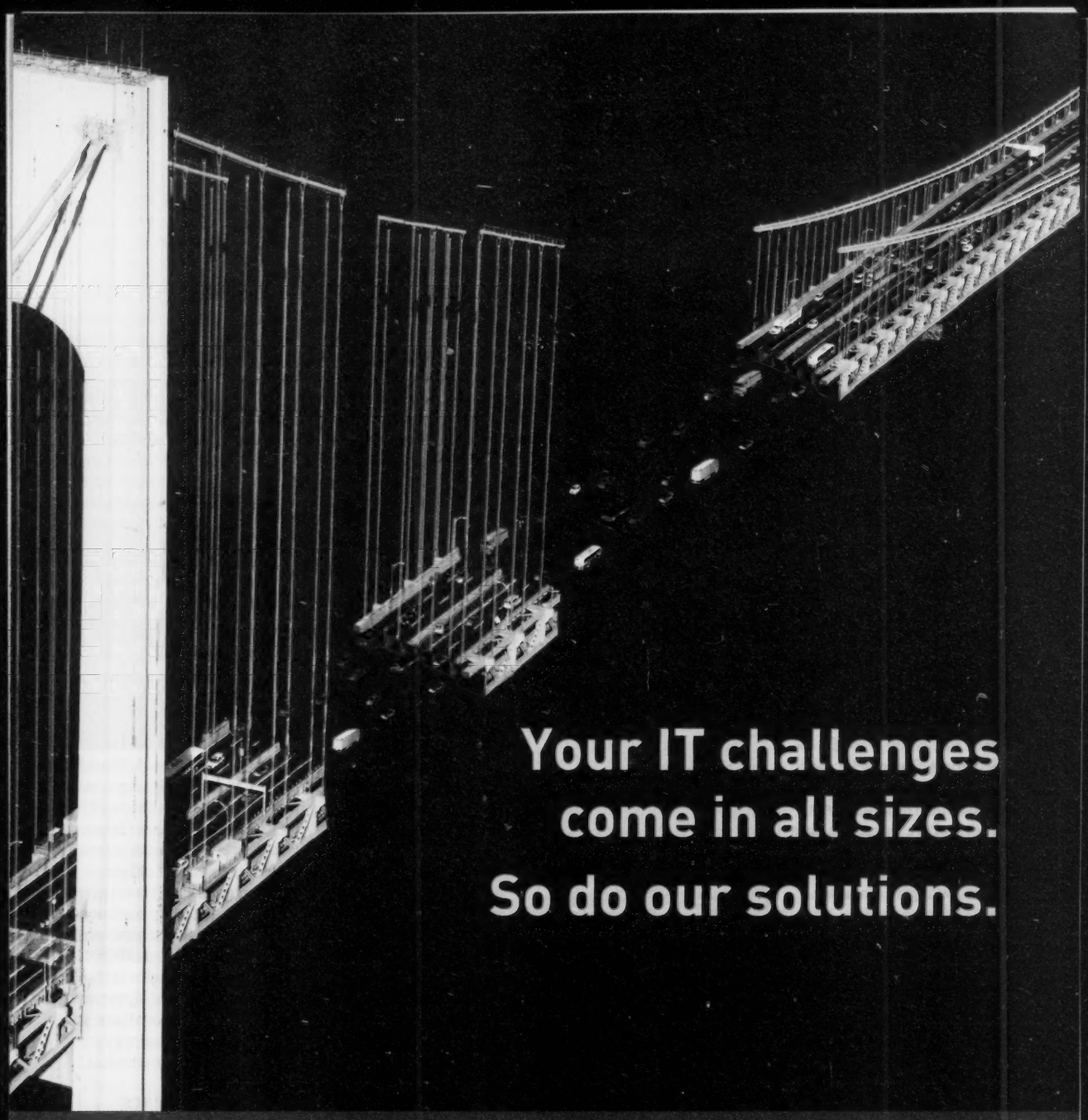

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"It's a scary concept when you just hand all of your important company data over to a third party," says Stitch Media's EVAN JONES.

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to a third party," he says.

Like a growing number of IT managers, both Flax and Jones are beginning to realize that cloud computing doesn't offer companies a free ride when it comes to security. A Gartner Inc. report released last year identified concerns about risks in several areas, such as data privacy and integrity and compliance management, that should give pause to anyone thinking about rushing into cloud computing.

"Enterprises, particularly those in regulated industries, need to weigh both the business benefits and risks of cloud computing services," warns Jay Heiser, a Gartner analyst.

One of cloud computing's biggest risks arises from its very nature: It allows data to be sent and stored just about anywhere — even divided among locations around the world. While data dispersion helps give cloud computing a cost and performance edge, the downside is that business information can land in storage systems in locales where privacy laws are loose or even nonexistent.

Flax, who is using Salesforce.com Inc.'s Force.com platform to automate Cowen's global sales systems, says the best way to ensure that data steers clear of risky destinations is to work with a cloud vendor that is a public company and is therefore required by law to disclose how it manages information.

Salesforce.com is publicly traded, and "as a result, we have a sense of comfort that there are strict processes and guidelines around the management of their data centers," Flax says. "We know our data is in the U.S., and we have a report on the very data centers that we're talking about."

Agora Games, a company in Troy, N.Y., that builds Web communities for video game players, currently has no say on the matter of where its cloud computing provider, Terremark Worldwide Inc., hosts its data and applications. But that will be changing in the near future, says Brian Corrigan, Agora's chief technology officer.

Terremark will soon give Agora "the option to choose where virtual machines actually run," he says. "Right now, the only choice is the Miami facility, but Terremark is adding other locations, so [it will be] an issue we can manage however we want."

TRACK AND TRACE

Cloud computing's dispersed nature also makes it challenging to track unauthorized activity, even when careful logging procedures are used. Virtually all cloud computing providers use encryption, such as Secure Sockets Layer technology, to safeguard data in transit. But Heiser notes that it's also important to ensure that stored data is encrypted. "If data is stored in

5 Steps To Cloud Security

1. **Understand the cloud.** Realize how the cloud's uniquely loose structure affects the security of data sent into it.
2. **Demand transparency.** Make certain that the cloud provider can supply detailed information on its security architecture and is willing to accept a security audit.
3. **Reinforce internal security.** Ensure that internal security technologies and practices, such as network firewalls and user access controls, are strong and can mesh well with cloud security measures.
4. **Consider the legal implications.** Understand how laws and regulations will affect what you send into the cloud.
5. **Pay attention.** Look for changes in cloud technologies and practices that may affect your data's security.

– JOHN EDWARDS

7 Issues to Clarify Before Adopting Cloud Computing

In a June 2008 report titled "Assessing the Security Risks of Cloud Computing," Gartner identified seven security concerns that cloud users should address with prospective vendors.

1. **User access.** Ask providers for specific information on the hiring and oversight of privileged administrators and the controls over their access to information.
2. **Regulatory compliance.** Make sure your provider will submit to external audits and security certifications.
3. **Data location.** Ask your provider to store and process data in specific jurisdictions and to obey the privacy rules of those jurisdictions.
4. **Data segregation.** Find out what is done to segregate your data, and ask for proof that encryption schemes are efficacious.
5. **Disaster recovery.** Know what will happen if disaster strikes. Ask whether your provider will be able to completely restore your data and service, and find out how long it will take.
6. **Investigative support.** Ask the vendor for a contractual commitment to support specific types of investigations, such as the research involved in the discovery phase of a lawsuit, and verify that the vendor has successfully supported such activities in the past. Without such evidence, don't assume that it can do so.
7. **Long-term viability.** Ask prospective providers how you would get your data back if they were to fail or be acquired, and find out if the data would be in a format that you could easily import into a replacement application.

"It's a scary concept when you just hand all of your important company data over to a third party," says Stitch Media's EVAN JONES.

Continued from page 26

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Steps To Cloud Security

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Understand how laws and regulations will affect what you send into the cloud.

Look for changes in cloud technologies and practices that may affect your data's security.

– JOHN EDWARDS

a shared environment, which is what usually happens, you can assume that unencrypted data may be read by unauthorized parties," he says.

Mike Mullin, IT director of Indian Harvest Specialtifoods, a Bemidji, Minn.-based company that distributes rice, grains and legumes to restaurants worldwide, says he relies on provider NetSuite Inc. to ensure that the data he sends into the cloud is fully protected. "With SSL, I'm pretty confident that our data is secure," he says. "If it isn't, then I think a lot of people will have problems and that the [cloud] industry as a whole will have a problem."

Mullin notes that cloud adopters also need to closely assess their own infrastructures and security practices, particularly access controls. "Your side of the infrastructure is just as vulnerable, if not more vulnerable, than the provider's side," he says.

Jones, who is using Amazon.com Inc.'s S3 cloud platform to share files with employees and contractors worldwide, agrees that access control is vital. "We have found that the system works best for us when we assign different levels," he says. Documents at the highest level of sensitivity simply aren't sent into the cloud; they're stored locally. "There are some documents that we're just not ready to go all the way with, but I'd say that 95% are not at that level," Jones says.

Corrigan says that comprehensive cloud security requires a holistic approach. "For supersecure data, start with how it's stored and then deal with how it's transmitted," he advises. "Manage access through some sort of two-factor authentication scheme. If you're really concerned, you can host your own [authentication] server in-house — this guarantees that you're in control."

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MIKE MULLIN, IT DIRECTOR, INDIAN HARVEST SPECIALTIFOODS

A MATTER OF COMPLIANCE

Because it places business data into the hands of an outside provider, cloud computing makes regulatory compliance inherently riskier and more complex than it is when systems are maintained in-house. Loss of direct oversight means that the client company must verify that the service provider is working to ensure that data security and integrity are ironclad.

Heiser notes that any cloud provider should be willing to submit to external audits and security certifications to ensure the quality of specific controls. "A reluctance to cooperate is a warning sign," he says.

Working in the tightly regulated financial services industry, Cowen's Flax relies on SAS 70 audits to ensure that his cloud provider meets government and industry requirements. "There are standards in place for what a SAS 70 for a data center should be," he says. The SAS 70 audit, developed by the American Institute of Certified Public Accountants, covers data transmission and storage technologies and practices, including network operations, data safeguards and physical security elements.

"We read these audits very carefully because, as with an audit of somebody's financial books, just because the audit is complete doesn't mean they passed with flying colors," Flax says.

BOTTOM LINE

The fact that IT executives and managers are increasingly recognizing and controlling cloud computing vulnerabilities is a sign that adopters are beginning to view the emerging technology realistically rather than through rose-colored glasses. "It shows an increasing level of maturity," Heiser says.

Since cloud computing security weaknesses can now be reliably anticipated and addressed, Flax believes that security concerns alone shouldn't dissuade an enterprise from moving into the cloud. "Anytime you look at a new platform, you should do a thorough analysis before putting data on it," he says. "In this case, we did the analysis, and we were comfortable with it."

Mullin, who views cloud computing as a logical progression from software as a service and other hosted offerings, agrees. "Hosted applications have been around for a long time," he observes. "The security aspects are well understood, and I'm comfortable with that."

Corrigan says that he, too, is comfortable with the current state of cloud security. "I wouldn't say I lose any more sleep over our cloud provider than I do over our collocated physical servers," he explains. ■

Edwards *is a freelance writer in Gilbert, Ariz. You can contact him at jedwards@gojohnedwards.com.*

Project Management FOR Networking Geeks

You don't have to be a certified PMP to think like one.

By Greg Schaffer

NETWORK professionals are typically well versed in the technical aspects of networking: router and switch configuration, server deployment and management, and so on. They are rarely trained on how to manage projects, however. This is unfortunate, because many of the problems that networking pros face in projects can be mitigated with just a few project management skills and techniques.

Design and install networks long enough, and you'll be sure to have some projects go awry as a result of unforeseen surprises. Sometimes, the power in a communications room isn't ready when you need to install an Ethernet switch. Other times, the one piece of network equipment you need is on perpetual back order. Or users decide they need greater wireless coverage than they asked for — for the same cost, of course.

Managing network projects doesn't have to be an exercise in fortunetelling, however. At heart, a network project is just like any other project: It has an objective, a timeline, a budget and client expectations.

Properly trained project managers command hefty salaries because they understand these factors, but I've discovered in my own pursuit of a Project Management Professional certification that applying a few simple project management tips can make a big difference.

TRIPLE CONSTRAINTS

I once saw the following on the wall of an oil-change service station: "You can have it done cheap, fast or right; pick two." This is true of all projects, and it illustrates the so-called triple constraints rule: Projects are subject to cost, schedule and performance parameters. Changing one will affect at least one of the remaining two.

For example, let's say you're installing a network to allow for Internet access and e-mail at Shelbyville Bank and Trust. The project includes configuring a Microsoft Exchange server and installing a virtual private network firewall for security. The deadline is in two months.

One week into the project, things change, and the network needs to be done in three weeks instead of two months. Your staff is already fully devoted to this and other projects. You can't cut out functionality, because the office still requires all of the network connectivity and e-mail functionality. What can you do?

The only way to accommodate the schedule is to increase manpower by paying overtime to your employees or subcontracting. Either way, the cost will go up, yet the bank will likely balk at that. At that point, armed with the understanding of the triple-constraints principle, you can calmly explain why the new deadline will increase the overall network project cost.

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CHARTER AND SCOPE

To reduce the likelihood of a network project growing uncontrollably, make sure everyone understands the project deliverables — what the network will provide, how long it will take and at what cost. Your key constituencies here are the project sponsor (the person requesting the network installation or change) and the network administrator.

Start from the general (the project charter) and migrate to specifics (project scope).

The project charter could simply be, "Provide network connections for the new Shelbyville Bank and Trust building at 123 Main St." Details, including the number of connections, security protections needed and services desired, are best left to the project scope. The scope simply supports the goals defined in the charter while providing more details; it is not a complete network-engineering plan in itself.

You can create an initial cost estimate for the project from the scope. If the scope is too broad (or missing), precise estimates are impossible.

A good trick is to take a network project of comparable scope that you worked on previously and use that as a basis for the estimate. Give a range rather than a single-figure estimate — maybe 50% on either side of the estimate derived from historical knowledge. As the scope becomes more clearly defined, refine the cost estimate by changing the midpoint as appropriate and reducing the range size.

SCHEDULE

Once scope is known, determine a project schedule. You'll already know the two most important project points: the beginning and the deadline. It's up to you to fill in the blanks.

Here's where a project management software package such as Microsoft Project really comes in handy. It can tie all aspects of the network project together. Setting up the plan can take some time, but it will pay dividends many times over the course of the initiative.

How do you start? Let's take the bank project, which is slated to begin on March 5 and demands that the network be completed by July 31. Suppose you know from experience that you generally receive network equipment from your supplier four weeks after ordering.

Furthermore, you know that it typically takes two weeks to configure and burn in the equipment and another two weeks to install and test. Start from the deadline and count backward eight weeks; that's your milestone date for ordering the equipment. And so on.

Breaking It Down

When planning a network installation, I typically divide the project into six phases:

- **Gathering information on the project's scope and the existing infrastructure.**
- **Making purchasing decisions about which switches, routers, firewalls, servers and so on are needed.**
- **Ordering equipment.**
- **Configuring and installing the servers and network equipment, and testing connectivity and functionality.**
- **Gaining customer acceptance.**
- **Documenting the network for ongoing maintenance and support.**

– GREG SCHAFFER

SCOPE CREEP

Scope creep is a change in project requirements after the project is under way. A common example that most networking professionals have encountered is when the customer decides it needs more network capacity (number of jacks) than what you planned for.

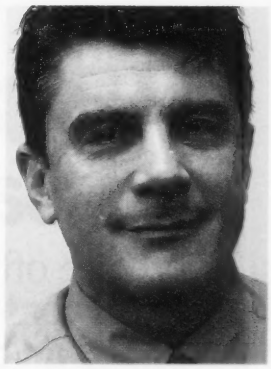
But changing the number of connections doesn't just affect network electronics costs. Additional cable drops and patch panels for terminations may be needed. Additional switches or servers may require heftier uninterruptible power supplies and may increase heat generation, forcing an upgrade of the HVAC design of the communications room or data center.

Scope creep arises because of an assumption that everyone was in agreement, when in reality, everyone was not. When all parties truly agree on the scope at the beginning of the project and understand the costs of scope creep, it's less likely that it will occur.

If the scope really needs to change, simply create a new cost estimate and timeline to accommodate the modification. Changes are not necessarily all bad, as long as everyone involved understands their effects.

CLOSING OUT

Once the network infrastructure is completed, there are still three major tasks to accomplish before the project can be closed. The first is rather obvious — ensuring that the network functions as the customer intended. The customer should perform as many business-related tasks as possible to test the infrastructure and then formally sign off and accept the project. This prevents end-of-project scope creep.



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GREG SCHAFFER

The second job, too often neglected, is to fully document the network to ensure that it is manageable and supportable. Network drawings, router configurations, circuit numbers, server disk partition information, IP address assignment — everything that was pertinent to the successful completion of this project — should be documented and stored where it can be easily retrieved.

Finally, a postproject review, particularly of what went wrong, will help prevent the same mistakes from happening on a future project.

Remember, you don't have to be a certified PMP to think like one. Try it! ■

Schaffer, *CISSP, has more than 20 years of experience in networking. Contact him at newtnoise@comcast.net.*

Let's Be Reasonable, And Save Money, Too

There are often **alternatives available** that **will cost** the company **less,** if you just **keep an open mind.**

I'VE ALWAYS tried to be reasonable in my approach to security policies. After all, unreasonable ones will just be ignored or bypassed, actually reducing security.

Of course, "reasonable" is a matter of context. What works for a community college may not be the right approach for a bank or the Pentagon.

Now, I'm finding that being reasonable can also be beneficial in our efforts to reduce costs.

For example, when I wrote our remote access policy several years ago, I didn't specify a particular technology. Instead, I stated that remote access to our company must employ two-factor authentication, strong encryption (which I defined as a minimum of 128 bits) and the rule of least privilege, meaning a mailroom clerk shouldn't have the same type of access as a network engineer.

That policy gave rise to our use of a Nortel VPN concentrator, for a client (IPsec) VPN, and Juniper for the SSL VPN. We've had no problems, but the recent pressure to cut costs has led to some creative thinking by one of our network engineers, who noted that our Cisco router code can support various forms of VPNs. By using the Cisco Internetworking Operating System (IOS) for a dynamic, multipoint VPN, we could eliminate the need to maintain the small Juniper firewalls that we use for point-to-point VPNs within the company.

We could create an IPsec VPN tunnel between two Cisco routers on an as-needed basis, since tunnels can be created on demand between various points within our WAN. Even better, the Cisco IOS can facilitate both IPsec VPNs and SSL VPNs. It's all quite reasonable.

For an additional cost, the Cisco IOS also has an admissions control feature for ensuring that employees gaining remote access to our network are using properly secured equipment. We could lock out client machines that aren't up to date with patches and antivirus software.

■ I'm finding that being reasonable not only makes for solid security policies, but it can also be beneficial in our efforts to reduce costs.

I've brought my own creative thinking to bear on another costly process. For the past couple of years, our IT department has been retaining the hard drives of every departing employee as a way of meeting a mandate to keep all data intact. (My company has been involved in a stock-option-grant investigation.) What's more, we've been setting aside corrupted hard drives instead of rebuilding them.

With some 7,000 employees, we've had to retain 50 to 60 drives per month, at a cost of about $12,000 per month. It's costing us a lot of money because we haven't been able to supply our new employees with wiped hard drives.

LOOK INTO A MIRROR

My idea is to take a mirror image of each drive and store it on our network-attached storage infrastructure. Technicians at our remote offices will create the images and store them on a mapped network drive. We'll set permissions and apply other methods of access control to ensure the availability and confidentiality of the data.

To make sure that we create forensically sound images, we'll need write blockers, which prevent data from being written to a hard drive. That's a small expense, but the workstations for the image processing should be free, since our recent virtualization project freed up a bunch of hardware.

We can choose between AccessData's Forensic Toolkit and Guidance Software's EnCase for the imaging; we already use both for other purposes. I had our development team create a Web form to track all the information regarding the imaging process. The form is searchable, so we'll know where a particular image is maintained.

I'm hoping that this form can also serve as a chain of custody, so that we can minimize the amount of paperwork needed. I figure that we can recoup our initial investment in about 30 days and save the company about $100,000 per year.

More than reasonable, I'd say. ■

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

Trouble Ticket

AT ISSUE: Every department is under orders to find ways to cut costs.

ACTION PLAN: Encourage creative thinking, listen to others' ideas, and think outside the box.

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■ OPINION

Preston Gralla

Why Netbooks Are Killing Microsoft

WHEN MICROSOFT laid off 5,000 people in January, analysts and pundits pointed to plenty of reasons for the first major layoffs in the company's history. The obvious culprits included the overall economic meltdown, Apple's continued success and Wall Street's desire to see a leaner Microsoft.

But the real cause of the layoffs can be summed up in a single word: netbooks. These lightweight, stripped-down laptops that sell for between $200 and $400 have taken a big chunk out of Microsoft's bottom line. Unless the company comes up with a plan to handle them, its revenue will stagnate.

In announcing the layoffs, Microsoft said that its revenue had increased an anemic 1.6% in the quarter that ended Dec. 31 compared to the same quarter a year earlier. But that number doesn't tell the whole story. Windows took the biggest hit, while systems for servers and related tools had hefty increases in sales. Windows sales were down an eye-popping 8%; server and related revenue grew 15%.

Microsoft clearly blames netbooks for the drop in Windows sales. Here's what it said in its statement: "Client revenue declined 8% as a result of PC market weakness and a continued shift to lower-priced netbooks."

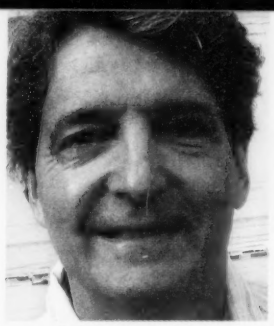
Netbooks have become the only bright spot for PC makers, with sales accelerating while the rest of the PC market stays in the doldrums. According to IDC, 10 million netbooks were sold in 2008 and that number should double to 20 million in 2009.

Why is all this bad news for Microsoft? First, an estimated 30% of all netbooks ship with Linux. That means Microsoft doesn't get a penny for Windows from 30% of all netbooks being sold. Given that netbooks represent the fastest-growing PC market segment, the company's problem may get worse with time.

■ The real cause of Microsoft's layoffs can be summed up in a single word: netbooks.

In addition, netbook owners who buy Linux machines won't be buying Microsoft Office, handing Microsoft an additional revenue hit for every Linux netbook sold. So it's not surprising that in the most recent quarter, sales of Office were anemic. Overall, sales for Microsoft's business division, which is in charge of Office, were up slightly, at 1.9%. But sales of the consumer version of Office plummeted 23% — and consumers are the people buying netbooks.

Microsoft faces other netbook-related woes as well. The company doesn't get paid as much for a version of Windows sold on a netbook as it does for a version of Windows sold on a laptop or desktop PC. There's very little margin on a machine selling for $200 to $400, and so Microsoft simply can't charge full freight for Windows on one. And given the price that Microsoft charges for consumer versions of Office — usually about $200 for the lowest-priced version — netbook owners who use Windows aren't likely to pay for Office either. It doesn't make much sense to pay as much for a piece of software as you did for your entire PC.



Microsoft clearly recognizes the problem and is taking action to try to solve it. First, it built Windows 7 to run on netbooks, something that Vista doesn't do. When Windows 7 ships, expect Microsoft to spend plenty of money promoting it for use on netbooks, in an attempt to drastically cut into Linux sales.

In addition, Microsoft is working on low-cost, ad-supported, Web-based versions of Office. That way, it can start to get Office revenue from netbook owners.

Will these steps be enough to make up for the overall shortfall in revenue caused by netbooks? Probably not. That's why the company is desperate to figure out a way to make its online businesses succeed. If it can't, the days of big revenue growth are behind Microsoft, thanks in part to netbooks. ■

Preston Gralla *is a* Computerworld.com *contributing editor and the author of more than 35 books, including* How the Internet Works *(Que, 2006).*

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Career Watch

The CFO and IT

Has your chief financial officer been sniffing around lately, asking a lot of questions about IT's plans for technology deployment? There's no need to suspect the worst. Chances are that the CFO is simply trying to get up to speed on an aspect of the organization he feels he should know more about.

IT is increasingly on the CFO's radar. In fact, many more CFOs today than five years ago say that IT experience is a great thing for a CFO to have. That's what Robert Half Technology found when it asked more than 1,400 CFOs this question: **"Other than knowledge of accounting and finance, which of the following types of experience are most beneficial for CFOs to possess?"** Compare what they said this year with what they said in 2003:

	2008	2003
Information technology	50%	28%
Operations	45%	46%
Legal	37%	26%
Sales and marketing	26%	24%
Other/don't know	2%	6%
None	1%	0%

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Best Places to Work (2009)
Are You a Student?

Peering Through The Glass Door

The Web continues to demonstrate its power to transform. For some, its ability to provide transparency into matters that had previously been shrouded in secrecy is considered laudable. For others, it can seem like an invitation to anarchy. No doubt, that dichotomy of views will greet the latest online experiment in openness: Glassdoor.com. Its mission is to let anyone peer inside the walls of any company, but its most immediate claim to fame is its listing of salaries for specific positions at companies in its database.

Currently, Glassdoor Inc.'s database holds salary reports and company reviews from more than 165,000 people working at nearly 19,000 companies in over 100 countries. Thanks to Glassdoor's "give to get" model, the site's database expands as people use it to learn about salaries and work conditions at various companies. That's because the database is accessible at no charge to anyone who is willing to provide reviews, ratings and salary details via a form on the Web site. (A student membership has been added to accommodate newcomers to the workplace who don't have corporate salary histories.)

You don't have to name your employer if it's small enough that your position would identify you, but plenty of people at large companies – including software engineers, project managers, technical architects and even vice presidents – have shared information about their salaries and detailed critiques of their companies.

Another feature of the site is a rating of CEOs by rank-and-file employees. Microsoft's Steve Ballmer garners a 44% approval rating from his employees, while John T. Chambers of Cisco is at 77%, Eric Schmidt of Google is at 88%, and newcomer Carol Bartz of Yahoo so far is at 0%.

At many companies, salary opaqueness is part of the corporate culture. In fact, it's not unusual for a company to have a policy stating that discussing one's own salary is grounds for dismissal (though there are states where such a policy would be illegal). Human resources professionals mostly agree that such disclosures lead to strife in the workplace.

But a different approach is taken by a few. In a Sept. 15 *Christian Science Monitor* story about Glassdoor.com, Marilyn Gardner reported that there's a Houston consulting firm that makes all salaries public. Gardner quoted Franny Oxford, head of the firm's HR department, who said the policy hasn't resulted in any drama. "People pull their weight because they know that others will question their value compared to salary if they don't," Oxford added. "Employees push themselves to learn more or perform better so they can earn larger raises than their co-workers. So far, the competition is friendly, and because we're doing well, it should stay that way."

On the other side of the issue is Cissy Pau, principal consultant at Clear HR Consulting in Vancouver, British Columbia, who told Gardner that sharing specific information about employee salary and benefits "raises issues of confidentiality and privacy, and the potential for office gossip and rumors around whose salaries are posted."

Clearly in favor of greater transparency are the founders of Glassdoor.com. Rich Barton founded travel site Expedia.com and later was involved in real estate site Zillow.com, both of which have contributed to openness in those formerly closely guarded fields. Co-founder Robert Hohman is the former president of Hotwire.com.

– JAMIE ECKLE

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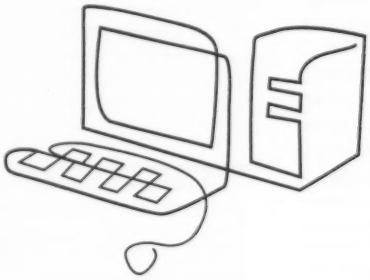

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Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

No Good Deed Goes Unpunished

This support pilot fish gets the word: The backlog of support tickets is way too big, and it's time to start cleaning up the queue – ASAP. So fish starts in on the task. "I went in and closed as many as possible," he says. "I was solving some problems, verifying bugs and passing them on to development, checking with customers to see if long-dormant tickets could be closed or if we could revisit the issues after an upcoming upgrade – using whatever honest means I could to reduce my list of open tickets. The week after I finished, the vice president decided the cleanup wasn't going fast enough," fish reports. "He had the idea to offer bonuses to whichever team members could close the most tickets. And there I sat, with less than a dozen tickets to compete with."

Not Our Problem

It's the morning meeting for this California company's help desk group, and there's only one trouble ticket to discuss: "We don't know why or what you did, but most of our computers have shut down and won't come up this morning," reads the complaint from a department head. But what could cause that? The group is working on an automatic shutdown scheduled for 9 p.m. for all training-room PCs – could that job have somehow run and affected this other department? No, says the tech in charge of that project. "So we send a tech to look at the problem," says a pilot fish there. "He returns to tell us that the circuit breaker for that department's cubicle area has tripped and all the power is off in the cubes. It seems that all the ladies in that department have personal heaters in their cubes and they leave them on 24/7, of course. Since it got cold last night in Southern California and we run minimal heating and cooling after hours, they all came on full blast. The huge suck of power tripped the circuit breakers. Problem identified – now it's up to the facilities maintenance people to try to collect the heaters from the department. I hope they have flak jackets."

Whatever Works

Pilot fish is disappointed that the Wi-Fi is down at his favorite Internet cafe, so he talks to one of the staffers and offers to help. "I found the problem quickly," fish says. "The access point wasn't plugged in. In fact, the power supply was missing. A few days later, when the Wi-Fi was up again, I asked the staffer about it. It turned out that the night before the outage, the duty manager got tired of waiting for the stragglers to leave the cafe at closing time – and simply unplugged and stashed the power supply so the customers would go home."

■ *Sharky loves an elegant solution — or any true tale of IT life. Send me yours at sharky@computerworld.com. You'll snag a snazzy Shark shirt if I use it.*

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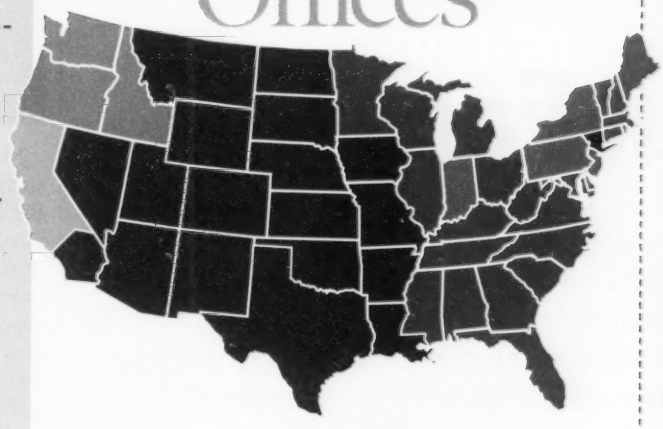

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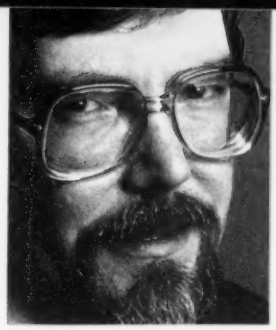

FORGET FACEBOOK. Well, OK, you can't forget Facebook's recent terms-of-use fiasco — it's been all over the papers. First Facebook claimed that it owns everything that its users post — forever. Then, after bloggers raised a mighty stink about that, Facebook reversed course.

Does it mean much? No. But there *is* a reminder here.

Not for Facebook users — for corporate IT shops.

Here's what happened, in a nutshell: On Feb. 4, Facebook made some changes to its terms of use, the agreement under which Facebook users can post to the social networking site.

A week and a half later, a blog called The Consumerist highlighted some key wording: Under the new terms, Facebook's right to use user-posted information for marketing, promotional or other purposes would no longer automatically expire when a user deleted anything (or everything) from Facebook.

From there, the story roared across the Internet and into the mainstream media, no doubt helped along by The Consumerist's headline: "Facebook's New Terms of Service: 'We Can Do Anything We Want With Your Content. Forever.' "

Was that what Facebook had in mind with the change in terms? Probably not. The new terms of use have the whiff of overzealous lawyering, combined with a hint of not-yet-announced business plans.

Maybe some lawyer realized that backup tapes might still contain info a user had removed. A major crash plus a slightly outdated backup could theoretically expose deleted user comments or pictures to the world — and expose Facebook to a lawsuit.

Perhaps Facebook was worried that it might be accused of destroying evidence in a lawsuit or government investigation and wanted the clear right to archive that data.

■ We are now at a nexus of technology, business, law, public relations and innovation – and, oh yes, a major recession.

Or maybe the company was planning on new connections with other social networking services, so data might migrate beyond its control, and the new terms were a way of covering its increasingly broad backside (175 million users and counting).

Whatever the reason, Facebook has since rolled back the changes. The Consumerist has backed down from its initial claims of a big Facebook rights grab. Users will deal — or quit using Facebook.

But what's the reminder for corporate IT shops? It's this: We are no longer in the IT business.

Sure, we do tech stuff. We're good at it and like it. That's why we're here.

But IT is now at a nexus of technology, business, law, public relations and innovation — and, oh yes, a major recession. And technology is the easiest part to deal with.

No, we're not running social networking sites. But we've got an ever-more-complex network of our own: customers, users, business partners, suppliers and service providers — all with their own competing interests and concerns, especially in the midst of an economic meltdown.

A service provider could change its policies or outsource a function without warning us, thus suddenly breaking our promises to customers.

Our management could plan a merger or a new line of business without telling us — instead handing us puzzling new procedures or terms to pass along to customers.

A lawsuit could require us to do things that we can't explain to partners or even our own staff.

See? It's a mess. And now it's *our* mess.

So forget Facebook. But remember this: We've got many of those same complications, conflicts and confusions that led to Facebook's very messy, very public problem.

And Facebook-style fiascoes aren't just for social networking sites anymore. ■

Frank Hayes *is Computerworld's senior news columnist. Contact him at frank_hayes@computerworld.com.*

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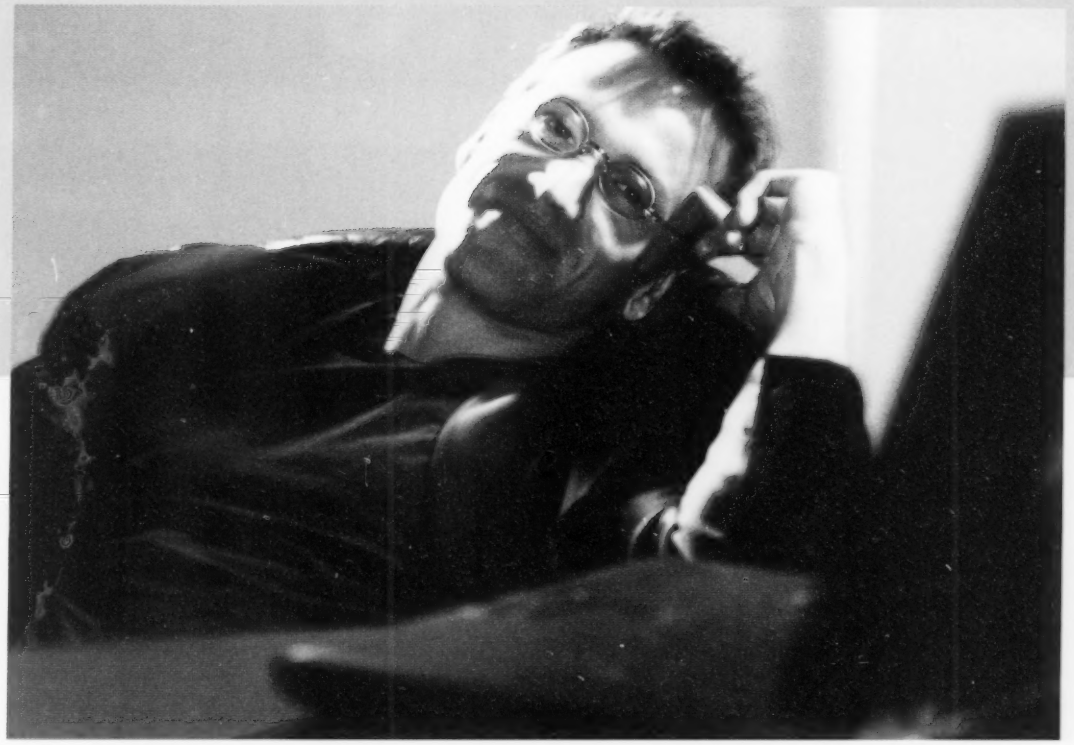

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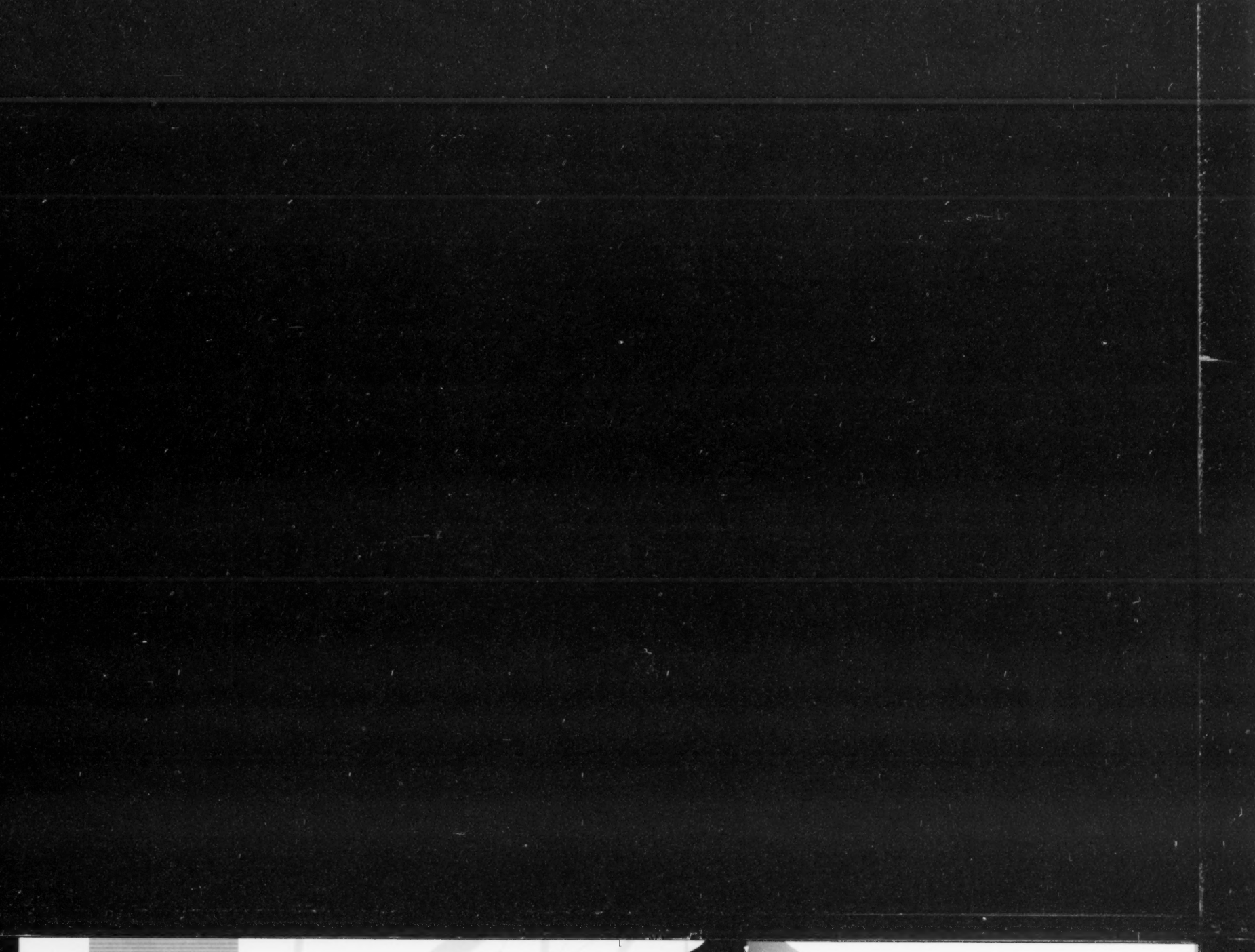
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